

WRITING AND THE ALPHABET

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WRITING
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INTRODUCTION

THE child who writes, or spells aloud, *c-a-t cat*, is showing himself the heir to one of the world's most original and important intellectual discoveries. The aim of this book is to make it more easy to appreciate the fact. It therefore tries to set out how writing has developed its historical forms, especially with reference to the alphabet; and, further, what service it gives to mankind.

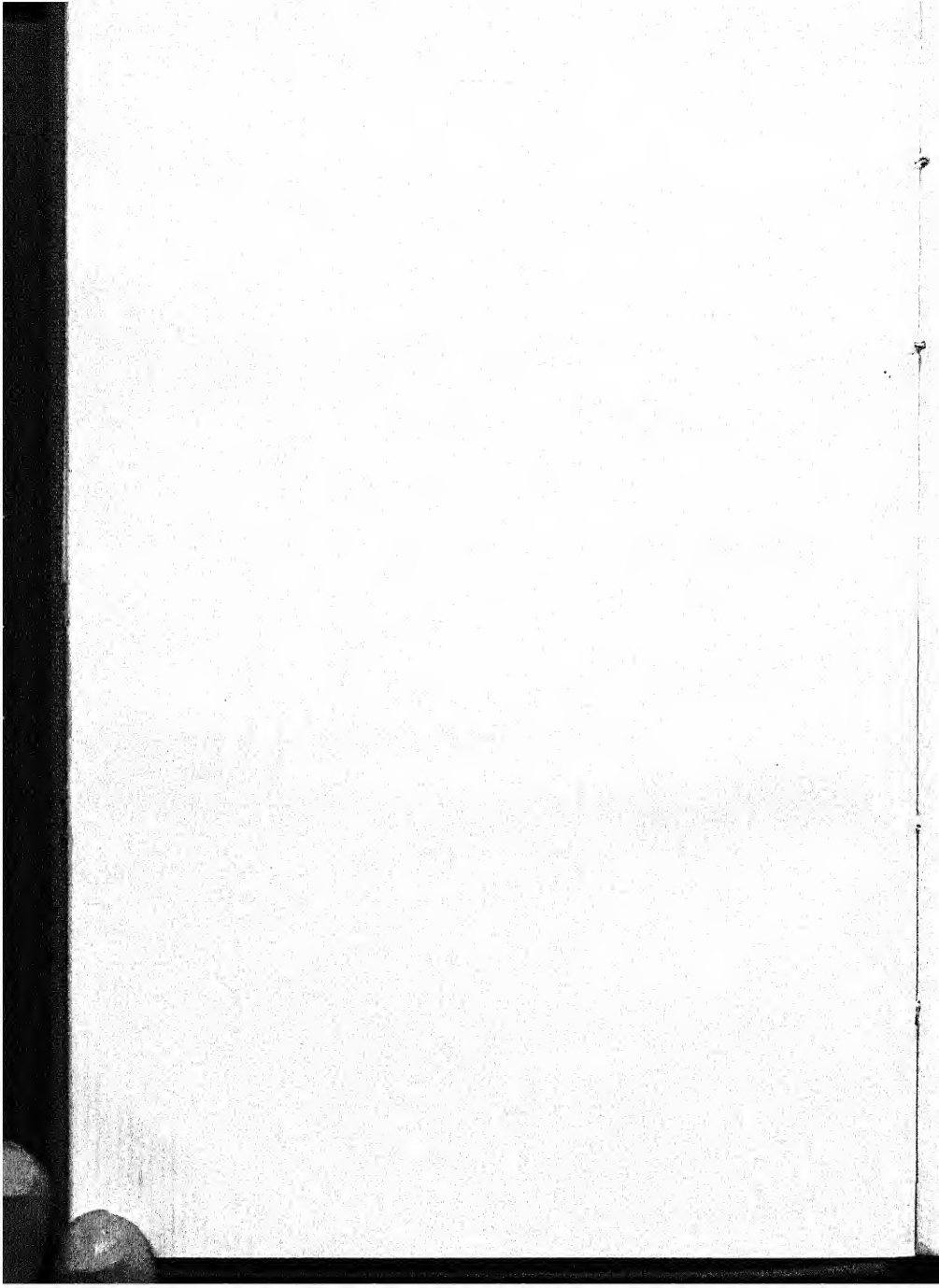
The present is a favourable time for this compilation. It is only within the last twenty years or so that the history of the descent of the alphabet has become reasonably clear, with the study of the inscriptions discovered on the site of ancient Egyptian turquoise mines in the Sinai peninsula. We are also living in an age when special efforts are being made to spread more widely the benefits of literacy; and, while schemes are on foot for popularising a simpler form of English (Basic), the use of the language is still hampered by the existence of the seemingly perennial problem of spelling reform. But the main object that I have in view is to emphasise the significance of writing, and the multiplicity of the links in the chain of tradition between us and the first users of it. I have not sought to make the review of scripts fully comprehensive, although all the more important have in fact been included. This is not a descriptive catalogue of the various forms of writing, but rather a study of the general trends that lie behind its development. It is a study which has special use in bringing out the unity of man's history.

I am happy to take the opportunity to express my thanks for the courteous assistance given by the Keeper of Egyptian and Assyrian Antiquities at the British Museum; Miss Fletcher, Librarian of the London Missionary Society; and Mrs. Little, Librarian of the U.S. Office of War Information in London. I am also much indebted for valuable advice and help to Professor B. Farrington and Professor V. Gordon Childe; and to my brother, Mr. P. E. Moorhouse, for help in proof-reading.

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The table on illiteracy (Figure 24) has been based on the table in "Literacy and Illiteracy," by Helen Sullivan, page 522 of Volume 9 of the *Encyclopedia of the Social Sciences*, by permission of the publishers, the Macmillan Company.



CHAPTER I

THE DEVELOPMENT OF WRITING

§ 1

We write for the same basic reason as we raise a hat to a friend and shake a fist at an enemy, tie a knot in a handkerchief, or fly a flag at half mast. These are different methods of communication, of passing on (to others, or to ourselves) a message with meaning, but they all agree in making their appeal to the eye.

Our concern here is with those methods of visual appeal which, unlike gesture, can retain their message for an indefinite length of time. It may be guessed that prehistoric man of the neolithic age—to go back no further—invented for his own use such aids to memory, but, if so, they have not survived, with the exception of paintings and drawings. In historic times an elaboration of the knotted handkerchief method is found in the use of knotted cords in many parts of the world, in North and South America, in Japan, Tibet and China, and in several parts of Europe. In a simple form the knot can stand for the figure 1, two knots for 2, etc. Thus Herodotus, the Greek historian, tells us (iv. 98) that, when the Persian king, Darius, was about to invade Scythia, he gave to the Greeks, who were staying behind to guard a bridge over the Danube, a leather thong with sixty knots in it. He instructed them to untie one knot each day that he was away, and to remain by the bridge until all the knots were untied. Then, if he had not come back, they might go home, but not before.

The most elaborate use of knots was made by the people of Peru, in the form known as “quipus.” These were found in use in the country when the Spaniards overran it in the sixteenth century, and were widely employed by the Incas,

the native rulers. They consist of knotted cords attached to crossbars, with other cords again hanging from them. The cords are of different colours. Unfortunately their interpretation is now highly uncertain. According to tradition they served not only as records of numbers, but also as legal and historical documents. A similar device is used in Peru to-day by shepherds for counting sheep.

In England too there have been similar instruments. Country people in Midland districts, especially in Staffordshire, had a type of calendar known as "clog almanacs" in the Middle Ages, and even down to the end of the seventeenth century. These were four-sided blocks of wood with notches cut on the edges to represent the days of the year. Primarily they were almanacs of the ecclesiastical year. Festivals and saints' days were distinguished by signs—e.g., St. David's Day by the figure of a harp. The sign of a heart suggested the Virgin, and so stood for both the Purification and the Annunciation of the Virgin; but this economy of signs would not confuse the "reader," who could be expected to know at about what time the two respective festivals occurred. Since they were well separated (February 2nd and March 25th), the chance of mistake was slight. This example, however, illustrates an important feature of such predecessors of writing. They are intelligible to those who are used to them, for whom they serve as aids to memory. But they must be explained to the uninitiated before their meaning can be seen.

§ 2

The methods considered in the first section, and the many others like them, are highly conventional and, for that reason, far from self-explanatory. Once the key to their explanation is lost, it becomes difficult, and even impossible, to understand them.

It is quite different with picture-writing. This is a form of communication which is simple to use, and whose meaning can be obvious to the ordinary intelligence without any previous experience at all. With the aid of pencil and paper a traveller can make his needs understood anywhere in the world by means of pictures. Naturally, picture-writing, with such advantages, has been most widely used since the earliest times.

The best examples of picture-writing come from North America, where the native Indians never of their own accord passed, as have other peoples, out of the stage of pictorial representation. They engraved and painted on rocks, on skins and on wood. They even, on special occasions, made pictures out of coloured beads, woven into the shape of belts which are known as "wampum." These wampum belts recorded important historical events such as the conclusion of treaties, and were not used for the happenings of every day.

The first and most important characteristic of picture-writing is that the event which is portrayed is seen as a whole.

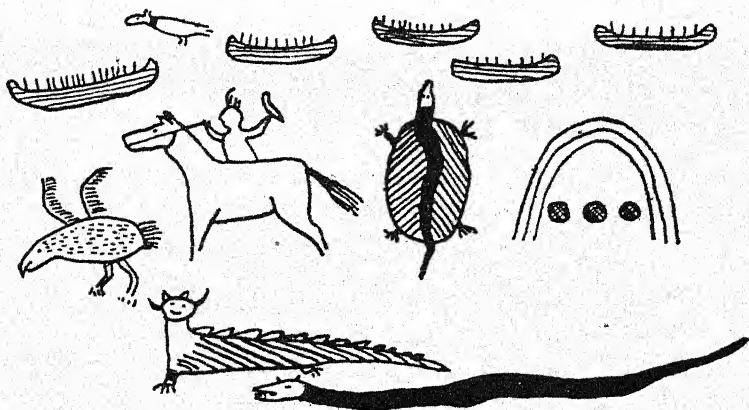


Fig. 1. *The expedition of Myeengun.*

This needs little elucidation, since it is the style to which we have been accustomed by pictures painted as art, and by photographs. It is an imitation of nature. Thus, if the artist wants to show us some men in a boat on the sea, he draws the sea round the boat, inside which he puts the men. The three constituents of the picture—sea, boat and men—are portrayed in a synoptic way. The artist does not separate them, and show, for example, the men apart from the boat. This fact is worth remembering, because it was the departure from it which was the first big step towards writing proper.

In Figure 1 we see an American Indian example, a painting made on a cliff near Lake Superior, Canada, which records an exploit of Chief Myeengun. This was an expedition in which five canoes took part. The number of men in the boats is shown by the lines running out of them—there were sixteen in the first, nine in the second, ten in the third, and eight in the fourth and fifth. The leading canoe was commanded by Kishkemunasee, whose totem sign (kingfisher), is above it. Three days were spent on the expedition—this is ingeniously shown by three suns under the vault of the sky. The man on horseback is the maker of magic who assisted the expedition, the land tortoise is the sign that they safely reached land, the eagle on the left symbolises courage, and the fabulous creatures at the bottom were invoked for their aid.

As is evident, even this picture does not explain itself. It was inevitable that in some degree the form taken by picture-writing should lose its purely natural quality, as a plain representation of an event seen by the artist, and become symbolical and conventional. In particular, the unity of time and place is not observed. So here the passing of three days is illustrated, with no attempt to show separately what the canoes did on the separate days. The kingfisher may, in a sense, be regarded as having gone with the company, and

even, perhaps, the eagle and the two fabulous guests—but no one can imagine that the magic-maker went with them on horseback.

Another example, also American Indian, will stress the mnemonic aspect of picture-writing. Figure 2 shows ten

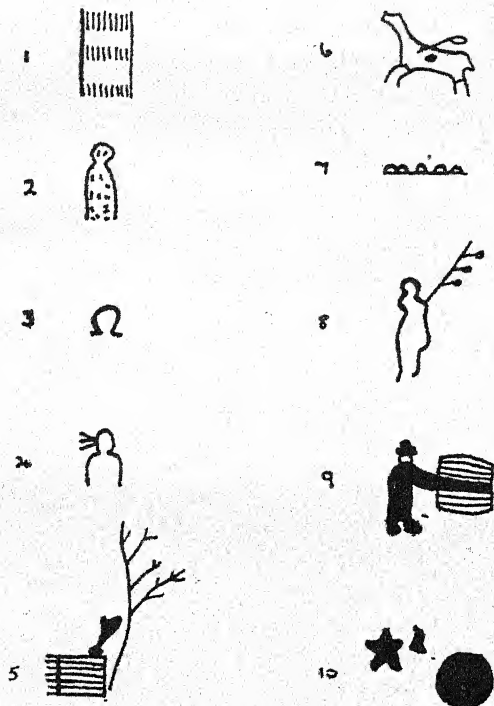


Fig. 2.—The calendar of Lone Dog. This record is named after the Dakota Indian who started it. Similar calendars (known as "winter counts") were kept by Sioux.

illustrations out of a series drawn on a buffalo skin by Dakota Indians. Every picture stood for one year in the series from 1800 to 1870, by referring to a notable event in the tribal

history in that year, and those shown are typical of the brief and allusive style. The references are as follows: (1) 1800.—Thirty Dakota killed by Crow Indians; (2) 1801.—Plague of smallpox (cf. the spots on the figure); (3) 1802.—An Indian stole horses wearing shoes (illustration of a shoe, not commonly in use); (4) 1813.—Epidemic of whooping-cough; (5) 1817.—A store-house was built from dried timber (tree without leaves); (6) 1824.—Chief's horses were killed; (7) 1825.—Indians drowned by flood (heads floating on surface of water); (8) 1848.—Indian called "Humpback" killed by spear; (9) 1853.—Spanish blankets imported (as usual, a European is shown wearing a hat); (10) 1869.—Eclipse of sun, which occurred on August 7th (during the total eclipse the stars were seen).

Before we leave picture-writing, let us look at an example from Ancient Egypt. Plate I shows one side of the Palette of Narmer, dating perhaps from about 3,000 B.C. The pictures here are in three stages of development. (a) The main group is a simple, naturalistic illustration: the king is standing in the centre, striking an enemy, and behind him is his sandal- and cup-bearer. At the base two more of the enemy are in flight. (b) The small group at top right is strongly symbolical. Horus, the falcon-god, is dominant over the people of the Delta: Horus holds a cord attached to a human head, and the head grows out of land from which spring papyrus plants. Since the papyrus (from which came paper) is characteristic of the Delta area, the home of the conquered people is thus clearly shown.¹ (c) Finally, to the right of the head of the kneeling figure in the main group are pictures of a harpoon and of a marsh, and these are meant to show that the captive belonged to the "Harpoon" district in the Delta. The pictorial character is here vanishing, since the essential quality—that the portrayal is made as a

¹ For another explanation, see *Antiquity*, vol. xi, 1937, p.265.

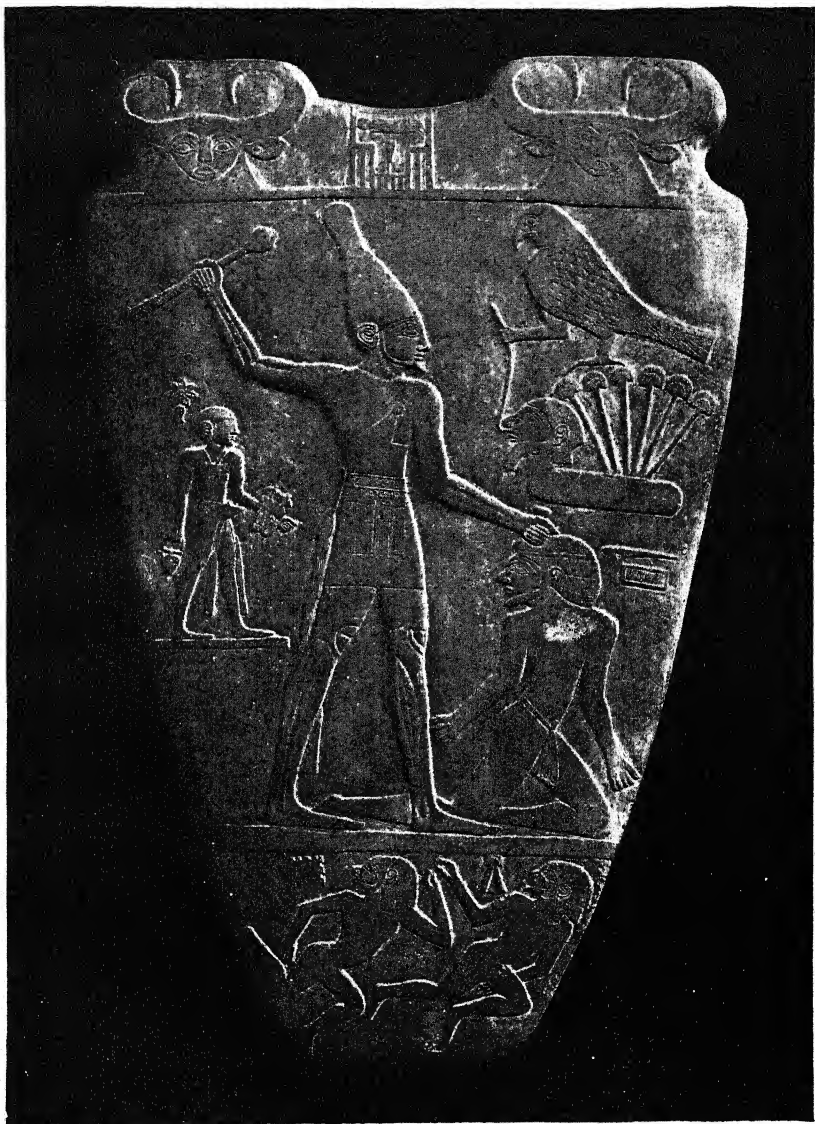


Plate I.—THE PALETTE OF NARMER.

whole, without analysis into the constituent parts—is absent. The harpoon and the marsh are shown without connection, side by side. Strictly this must be labelled “pictography,” to which we shall come next.¹

§ 3

In picture-writing the emphasis is on the picture, and we are very far from a system comparable to writing as we know it. But we now come to a more highly developed stage, which, so far as our knowledge goes, was the direct antecedent of every independent system of writing in the world. This is the stage known as pictographic and ideographic, named after the signs used in it, pictograms and ideograms.

A pictogram may be defined as a separate sign which stands for the object pictured by it. Common natural objects are found similarly depicted in widely separated parts of the world. The similarity is plain in the most primitive stage, though later it becomes obscured (Figure 3).

Pictographic writing arose by a process of analysis and abstraction. In it the various objects, which made up the complex incident that was to be described, were taken separately and the corresponding pictograms drawn side by side. The meaning of the sentence must be deduced logically from their juxtaposition. Figure 1, on the expedition of Myeengun, shows canoes with men in them. In pictographic writing the men would be depicted apart from the canoes, not sitting in them. Further, the abandonment of the old picture-form assisted another development—the creation of the pictogram with universal meaning. In the three sentences “the man catches the fish,” “the man cooks the fish,” “the man eats the fish,” we have three different actions performed

¹ It may also be noted that writing proper, in the form of hieroglyphics is present on the Narmer Palette.

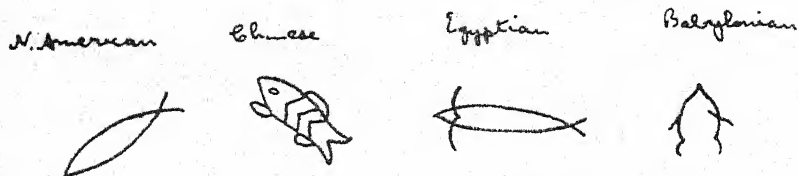


Fig. 3.—The Fish in pictograms. The lower line shows the later conventionalised forms: the American has no such development.

by the man. In picture-writing it would be necessary to depict each of the actions in a different way and so to make three different drawings of the man. But in pictographic writing one pictogram will serve for the man, which will be the same irrespective of what he is doing, and another one will represent the fish, which will look the same whether it is alive in the water, or in process of being eaten.

It is not to be supposed that the users of a series of pictograms were able to decide quickly and easily what form the stereotyped signs should take. Presumably the question had to be settled by common consent; but it must be remembered that the number of writers would be very small, so that the shaping of the conventional signs through agreement was less difficult than at first appears. There have been unearthed lists of signs among the earliest Sumerian finds, the use of which was possibly to show which conventions had been agreed upon.

For the pictograms themselves the settling of the conven-

tion was also fairly simple because it was necessary only to discover a design which would be at once distinctive and revealing. But associated with pictograms are signs of a different class, ideograms. These are signs representing ideas, qualities, and actions, and sometimes objects, none of which is directly depictable by pictogram, and doing so by means of suggestion. Whereas pictograms are merely copies made from nature, ideograms are new creations that make demands upon the inventive powers of their authors. They are therefore worthy of study for their own sake, since they can reveal to us something of the thoughts of men in an age of which there is no direct testimony.

Some typical Sumero-Akkadian¹ ideograms are seen in Figure 4. (a) stands for "month." The square is the sun

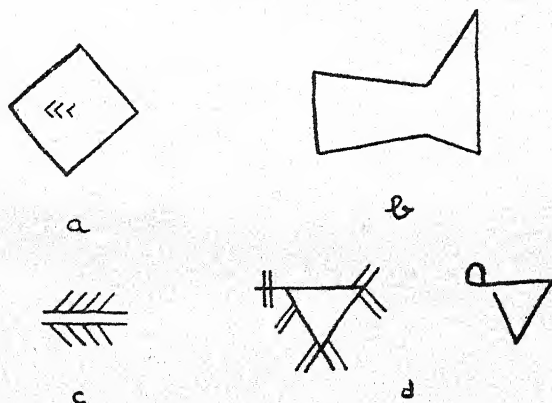


Fig. 4.—Cuneiform ideograms.

(also shown in Sumerian by a circle), and each of the three right-angled lines equals ten. Thus the whole means thirty days. (b) is for the verb "stand," shown by a somewhat

¹ *Akkadian* is the term used for the Semitic language and people of Mesopotamia in the period before the dynasty of Hammurabi at Babylon (1900 B.C. circa). *Babylonian* is used for the succeeding period.

formalised leg. In most ideographic¹ systems of writing the originally plain representations lose their pictorial features by degrees: this is because they are sacrificed to the desire to have signs easy and quick to write, while it is less needful that they should be self-explanatory when once the writing community has unanimously adopted the local conventions. A further point to notice here is that the leg is lying down, and not standing. All the signs in this system were turned through 90° on to their backs, when the way of holding the tablets was itself changed.² So, previously, this leg was standing up. (c) is for "split," an obvious formal design. (d) is for "destiny," and derived from the pictogram of a bird (an example of which, with the bird on its back, is also shown). It testifies to the practice of divination by augury.

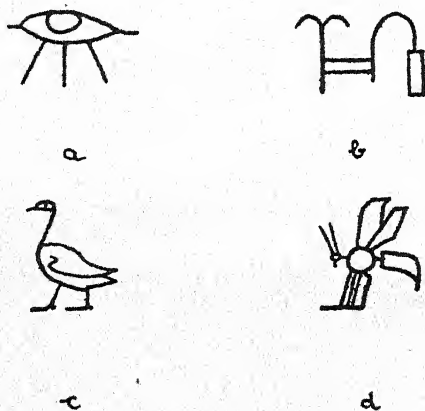


Fig. 5.—Egyptian ideograms.

Egyptian ideograms are seen in Figure 5, from the hiero-

¹ It is convenient to use this short term instead of "pictographic-ideographic" on occasions when there is no need to stress the distinction in the manner of representation. So, too, the word "ideogram" may be used to include the notion of pictogram. Fundamentally, pictograms and ideograms belong to one and the same system.

² See S. H. Hooke, *Antiquity*, vol. xi, 1937, pp. 275-6.

glyphic writing which preserved the original forms in a unique manner during a period of thousands of years. (a) represents "weep," by an eye from which tears fall. (b) means "writing," shown by an illustration of the common writing-implements, a split reed (left) fastened to a cord, from which hangs a portable ink-bottle. (c) is for "child," and especially "son." This desirable possession is suggested by a goose, which was a prized delicacy. (d) means "king," and is the pictogram of a bee. This remarkable choice throws light on the ancient Egyptian view of monarchy. It might have been expected that a creature would be chosen which suggested power and domination, such as the lion. But instead the bee was preferred, a comparatively harmless creature, presumably because of its extraordinary capacity for organisation.

Let us conclude this very brief survey with ideograms from Chinese writing (Figure 6), which is a richer source than any

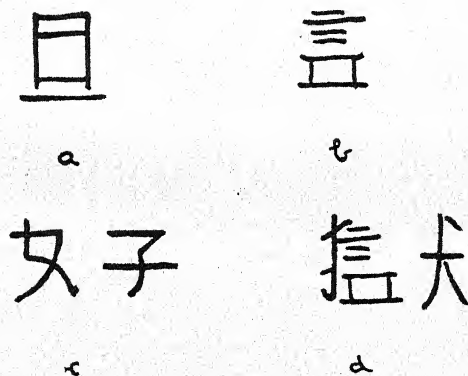


Fig. 6.—Chinese ideograms.

other system because of the multiplicity of signs (running into over thirty thousand of different types). It must be premised that the signs have undergone such great modification that recognition of their meaning at first sight, purely

from their appearance, is impossible. In each case illustrated, the signs (characters) are composite, and consist of two, or three, constituent signs. (*a*) means "dawn": the sun (the upper character, which was originally circular) is seen over the horizon. (*b*) means "words, speech." The rectangular character is a pictogram for "mouth," and the horizontal lines show vapour issuing from it. (*c*) is "happy." The two characters stand for "wife" and "child" respectively, and their conjunction suggests the state of happiness. (*d*) is "litigate." The first and last characters both stand for "dog," and in the centre we have "speech" (as in (*b*)). The whole puts forward a view of legal procedure as an argument like a dispute between dogs.

§ 4

So far nothing has been said of language in its connection with writing. The examples of writing which have been given arose independently of language. We can examine and appreciate the pictorial and ideographic signs of any people who have ever existed, without troubling to know what words they spoke. Yet for all of the things, for which there were signs, there were also words. Between the words and the signs, however, there was originally no link at all. We must now see how this link was forged, which revolutionised writing by changing its very purpose and making signs represent sounds.

It is not difficult to reconstruct the first step in the advance towards phonetic writing. A given object, e.g. a tree, was capable of being represented in two ways, (1) in writing, by the pictogram of a tree, and (2) in speech, by its corresponding spoken word (as, English *tree*). After these two forms of representation had been some time in use, the idea arose that the pictogram stood, not only for the natural object, the tree,

but also for the sound made when the word *tree* is spoken. This being so, it was possible to use the pictogram for the sound made by speaking the word *tree*, even in contexts where there was no reference to the object "tree." Suppose, then, that it was desired to make a sign which would stand for the idea "trepan" (which could not very readily be rendered by a pictogram or ideogram). A pictogram of a tree, plus another of a pan, would meet the requirement by giving to the reader the sound of the word. Signs of this kind, which represent sounds, are called phonograms, and writing systems which employ them are called phonetic (in preference to the less convenient phonographic). The method employed in our hypothetical example is just the same as that in the child's game of "rebus," which is probably familiar to all.

Though the general principle behind the creation of phonograms was everywhere in accordance with the example just given, there were local peculiarities in its detailed application. Thus it is plain that, in Egyptian and Chinese writing, the phonogram originally assumed the sound-value, which it had taken from its pictographic connection, in its entirety. The Chinese language consists, in essence, wholly of monosyllabic words, so that Chinese phonograms have monosyllabic value. But Egyptian had polysyllabic words too, and these led to polysyllabic phonograms. Figure 7 shows three Egyptian phonograms: (a) was the pictogram for "mouth," for which the word was *r*¹—hence the sign, used as a phonogram, had the monosyllabic value of *r*; (b) was the pictogram for "swallow," Egyptian *ur*—hence its value *ur* as a phonogram; (c) was the ideogram for "hear" (the sign represents an ear), Egyptian *šdm*, and so as a phonogram was a dissyllable.

¹ Egyptian writing suffered from the inconvenience that, as a rule, it did not express the vowels. Thus *r* is a monosyllabic sound, to be pronounced as *ro*. Here we can restore the missing vowel, but sometimes this is not possible. Chapter III below deals further with this feature.

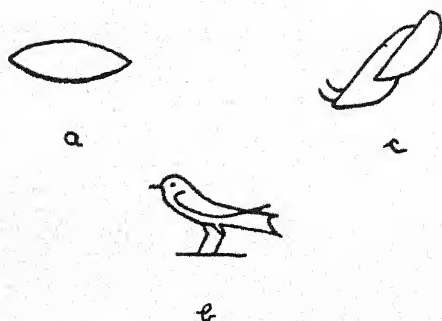


Fig. 7.—*Egyptian phonograms.*

On the other hand, phonograms used by the Aztecs in Mexico might take the sound-value, not of the entire words associated with their pictographic stage, but of the opening parts of those words only. In Figure 8 are seen Aztec signs

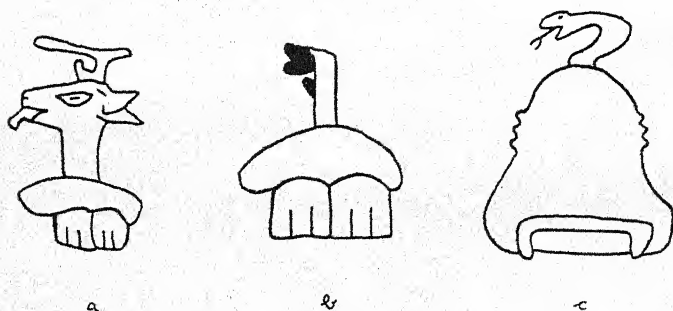


Fig. 8.—*Aztec phonograms of town-names.*



giving the names of two towns. The first was named "Mazatlan," and is represented by both (a) and (b)—(b) gives the conventionalized form of (a). The upper part is the sign for a deer (Aztec word for which is *mazatl*), the lower for teeth (Aztec *tlantli*). The composite phonogram takes the

first two syllables of *mazatl*, and the first of *tlantli*. (c) is the sign for the town "Coatepec": it shows a snake (*coatl*) on a hill (*tepec*). In this example the whole sound-value of the word *tepec* is assumed, but only part of *coatl*. It will be appreciated that the lack of uniformity of this kind makes understanding of the signs difficult for the reader: thus, one who was confronted with the sign at (c), and did not know beforehand of the existence of the town Coatepec, could be excused for reading it as Cotepec, Coatep, etc.

§ 5

All words are capable of being divided up into syllables. These units are the smallest elements of words which can be isolated and spoken. We have seen how a sign (a phonogram) came to represent the sound of a whole word (of one or more syllables), or, as in Aztec, of a not very clearly defined part of a word. This haphazard system was now improved upon by the syllabary, a system in which each syllable could be represented by a separate phonetic sign. Thus the phonograms were monosyllabic in value, so that the dissyllable was written with two signs, the trisyllable with three, and so on.

Babylonian cuneiform writing is an example of a syllabary. In its case there is doubt as to the manner in which the phonograms became monosyllabic. According to some authorities, they were given the sound-value of the first syllable of certain polysyllabic words in the native (Semitic) language, in addition, of course, to the assumption of the complete sound-value of monosyllabic models. But other scholars claim that they owed their monosyllabism to their original use by the Sumerians (from whom, as is beyond dispute, the Akkadians and Babylonians took over the great majority of their signs) since the Sumerian (non-Semitic) words, with which they were in connection, were all monosyllabic. For example, the

cuneiform sign  (earlier ) was originally a pictogram for "star" (*ana* in Sumerian), and later had the phonetic value *an*. The monosyllabism may be explained by (a) a deliberate choice of the first syllable only of *ana*, or (b) a change in the word *ana* itself, which became *an*, so that the value of the sign inevitably changed too. Chinese writing, in so far as it is phonetic, is also monosyllabic, for the very good reason that the words of the language consist of only one syllable.

There is a form of the syllabary in which the signs stand for open syllables only, i.e. those made up of consonant plus vowel, or of vowel alone. There is no sign for vowel plus consonant. This is seen in Japanese, and in the syllabary found in Cyprus. The latter, when it transcribes the Greek word *ptólin* "city," has to write it *po-to-li-ne*.

But, convenient as syllabic writing was when compared with its predecessors, it still suffered from a measure of clumsiness. This is evident in its handling of groups of consonants, where, as in the example just given, it is obliged to introduce unnecessary vowels. Moreover, it was uneconomical in the number of signs that it required. In our alphabetic system we can write the syllables *ak at ap ka ta pa* with the use of four different signs, for which a syllabary would require six¹; and if we add the series *ek et ep*, etc., we need only one sign on top of the previous four, but a syllabary requires six more.

So we come to alphabetic writing, which we may fairly regard as the finished and perfect product of all this long train of development. The essence of it is that the alphabetic signs each stand for a single vowel or consonant. There are, of course, exceptions in the form of double consonantal

¹ Or, if it were of the "open syllable only" type, it could manage with four, dividing *ak at ap* into *a-ka a-la a-pa*, while for the next series *ek et ep*, etc., it would want another four.

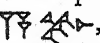
signs (e.g., $x=ks$, Greek $\psi = ps$), but these special cases may be overlooked as not vital to the existence of the system. The syllabaries already had signs for single vowels, since these could constitute syllables on their own. But it was a remarkable discovery that led to signs for single consonants, because it involved the abstraction of the consonant from the syllable. The sound of *a* can exist by itself, but not that of *k*: the consonant requires a vowel with it, making *ak* or *ka*. The sound of the consonant is inseparable from that of the vowel, but the alphabet separates it in writing. How this step came to be taken, we shall see in the next chapter.

§ 6

Before we leave this summary of the ways in which writing developed, we must dispose of a misapprehension which it may have produced. We to-day have the benefit of being able to survey the many different systems of writing that have been used throughout the world since the time when pictures were first drawn for the sake of communication. We also are familiar with the alphabet, the highest product of what may be seen as a process of evolution leading to the survival of the fittest, though not, of course, by natural, but by human selection. In these circumstances it is easy to mark how and where advance was made, and perhaps to conclude that it followed a direct and unswerving course, by stages which were mutually distinct. But such a view is quite misleading. There have been retrogressions, and the stages are closely intermingled; to pursue the metaphor, they do not follow on in line, but lie piled one upon the other. As with other human institutions, man has proceeded in the development of writing by altering and adding to his heritage piece by piece, and not by thorough new creation.

One example of what I have called retrogression is the multiplication of phonetic signs to represent a single sound. This was due to the historical fact that the words of a living language are all liable in the course of time to change their sounds and become, in effect, new words. This process of sound change is something inherent in the life of every language: it may escape our notice if we confine our knowledge of a language to a short period of time, but becomes obvious when we examine the same language at well-separated intervals, e.g., English in Chaucer's time and to-day. Suppose that there were two syllabic sounds, which we call for convenience x and y ; and that in time sound x turned into y . After this change any given y sound had one of two possible origins—it was either an old x , or had always been y . Now, if the sounds were written phonetically, there were in the first place two phonograms for x and y . These two phonograms still remained after the sound change (unless the decision was taken to drop one of them), so that henceforward y could be written in two different ways. To begin with, the use of the two signs for y would vary according to the origin of the sound in each case. But it would not be long before the old x was completely forgotten, and then there would simply be two signs for y , to be used indiscriminately. Both Egyptian and Babylonian suffered from this inconvenience. A partial parallel can be seen in English, which may make the development more understandable. In the sixteenth century there were two sounds, an \bar{e} sound and an \bar{i} sound (the first sound like the vowel sound in *pay*, the second like that in *pea*); and they were respectively spelt by *ea* (as in *great*) and by *ee* (*greet*). About A.D. 1800 the \bar{e} sound changed in English (in most cases) to the \bar{i} sound. The result was that the \bar{i} sound now had two different spellings, either *ea* or *ee*: thus, *tea* and *greet*. But English has not taken the final step of using the spellings *ea* and *ee* indiscriminately,

since it is still possible to tell from their use what was the origin of an *ī* sound represented by them.¹

There was another curious turn in the use of phonograms, which obscured their true, phonetic nature. An ideogram, it will be remembered, represents the idea which the spoken word suggests, and thus represents the word itself; a phonogram gives the sound made when the word is spoken. The Hittites of Asia Minor came into contact with Babylonian cuneiform, which contained both ideograms (and pictograms), and phonograms. They borrowed from it signs of the former class, e.g. the pictogram for "fish" (see the last sign in Figure 3): this caused no complication at all, since such signs are in principle independent of language. They also borrowed phonograms, e.g. that for the word *abu* "father," , which is composed of two syllabic signs *a-* and *-bu*. But the Hittites used this phonogram unchanged for their own word for "father," *attash*—in other words, they regarded it as if it were an ideogram.² The Persians did the same thing when they fashioned the script called Pehlevi. The basis was the phonetic system in which the Semitic language Aramaic was written. The Persians wrote the signs for Aramaic words, and then regarded them as standing for the corresponding Persian words. So they wrote the phonogram for the Aramaic word *malkā* "king," and it stood for the Persian *šāh* (cf. English *shah*). Strange as all this may seem, it can be paralleled in English, where we write *viz.* (an abbreviated form of Latin *videlicet*) and pronounce "namely."

Lastly, we have said that the various stages of writing in practice overlap. This means that we find pictograms, ideo-

¹ Incidentally, it may be noted that the pronunciation of English in Ireland has here remained more archaic: *tea peacock*, etc., are pronounced as *tay paycock*.

² A sign so used may be called a logogram: it is a sign attached to a particular word, though without reference to its meaning (which would make it an ideogram) or its sound (a phonogram).

grams and phonograms co-existing in the same system at the same time. Indeed, the greatest of the ancient systems which have died out, Egyptian hieroglyphics and Babylonian cuneiform, always kept their pictograms and ideograms in use on an extensive scale; while Chinese keeps its own in general use to-day. It is only in the fourth great world-system, the alphabetic, that these signs have become for the most part extinct—their chief survival being in the numerals. In the third chapter, examples from Egyptian will illustrate this heterogeneous character, which is a clear testimony of the slow and tentative way in which writing developed.

CHAPTER II

PRE-ALPHABETIC SCRIPTS

§ 1

There survive examples of a number of scripts ranging from the ideographic to the purely phonetic, to which the term "pre-alphabetic" may be generally applied. The use of the term does not necessarily mean that they were all in existence at a date earlier than the first alphabet. But at any rate, in spirit, they precede alphabetic writing. With one exception—the Chinese—they have had their day, and now form part of the material of ancient history. Their purpose here will be to illuminate the background from which the alphabet emerged and, in the case of Chinese, to show how that script chose the divergent path that gave it its unique character.

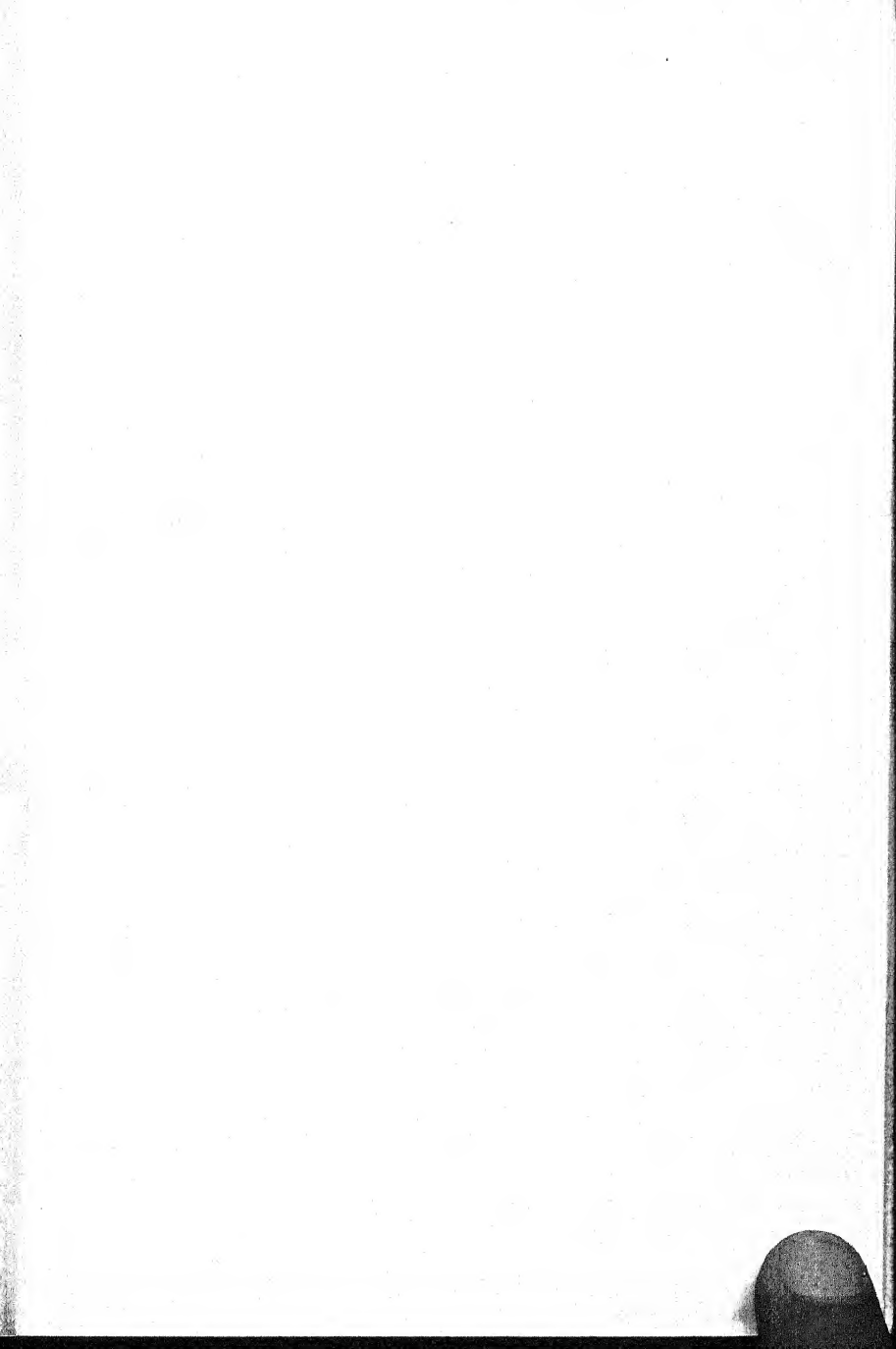




Plate II.—PHAESTUS DISC.

§ 2

It is a curious fact that the mainland of Europe has never at any time produced an original system of writing, either of the more primitive ideographic kind or of the phonetic. This complete absence of invention is the more striking when we look at the relative abundance of systems which arose in the islands of the Eastern Mediterranean and on the shores about it. This comparatively small area has been more fertile than any other part of the world in the production of scripts—indeed, if we may extend it to include the valley of the Euphrates, the number of those which originated here is as large as the combined total produced in the rest of the world.¹ When it is added that the now almost universal alphabetic system belonged to their number, the historical pre-eminence of the area becomes obvious.

The small island of Crete has yielded specimens of several scripts to excavators. The oldest, dating from the third millennium B.C., is clearly ideographic. It was succeeded by a type which is known as linear, from the fact that the signs are made up of simple lines, drawn straight or curved. The linear Cretan is found in two forms, an earlier and a later: the second possesses more stereotyped, geometrical designs. Figure 9 shows both the ideographic and the early linear. Finally, in addition to these, Crete had yet another, quite unrelated, ideographic script, known only from a single round clay tablet, the Phaestus Disc. Since no other specimens of this last type have been found in Crete, it has been conjectured that the tablet was imported from outside. That, however, in no way solves its mystery, because there is no known parallel to the script elsewhere.

¹ Five independent scripts in the "Mediterranean" area (Egyptian, Sumerian, Hittite, and two Cretan): and five elsewhere (Indus valley, Chinese, Maya, Aztec and Easter Island). These are all ideographic. The alphabet is not strictly an independent script. The Cyprian syllabary, of uncertain origin, is also omitted.

Despite numerous attempts, no one has yet been able to translate any of these Cretan inscriptions at all satisfactorily. This is not really surprising, and illustrates the difficulty into which interpreters of unknown scripts commonly run. Suppose that an investigator is faced with writing of a sort not previously known. How does he read it? His best line of approach is to discover some word which he can be sure is written down in the unknown script, and then trace it in the inscription before him. For this purpose the best words to



a.

b.

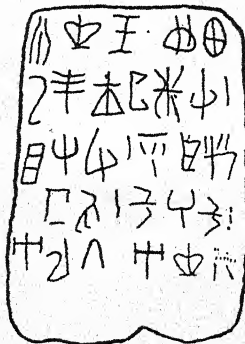


Fig. 9.—Cretan writing. (a) is of the type called ideographic, assigned to the third millennium B.C. (b) is early line r, from about 1800 B.C. Both undeciphered.

look for are proper nouns, such as names of persons: for these words pass without much, if any, change from one language to another, so that, even if the language of the script has itself never been interpreted, it is fairly certain that the proper noun will appear in it still recognisable. Our investigator will discover these proper nouns in various ways.

the Egyptians, in peace and in war, and there exists a large number of written records of their international dealings. They borrowed the cuneiform system of writing from the Assyrians, as we shall see below : but in addition to this they had a native ideographic script of their own, commonly called the Hittite hieroglyphics. This system was a distinctive one, with no resemblance to either the Cretan or Egyptian hieroglyphics. Its age is uncertain. It appears to have been used for monumental purposes, inscribed on stone or metal, in contrast with the common use of cuneiform on clay for the business of everyday life. There are about two hundred different signs. Happily there are a number of bilingual inscriptions, in the form of seals from Boghaz Keui in Asia Minor, written both in hieroglyphics and in cuneiform—the Seal of Tarkondemos (Figure 10) is of the same type. Nothing like finality has yet been reached in the decipherment of the hieroglyphics, but active work is going on in this field, and it seems that we may look forward to solving at any rate some of its mysteries.

Other scripts of ideographic appearance occur in such widely separated parts as (a) the valley of the Indus, belonging to an ancient civilisation of the third millennium B.C. ; (b) the remote Easter Island in the Pacific ; and (c) Mexico and Central America. Only the two from the last-named district have been in part interpreted, the Maya and the Aztec.

The Mayas reached the height of their culture in the period between the first and sixth centuries A.D., and the Aztecs, who were somewhat less advanced, between the eleventh and sixteenth centuries. Among the languages of modern Mexico there remain descendants of the ancient speeches of both peoples. Almost all their manuscript books were destroyed by the Spanish invaders in the sixteenth century, but a few remain, together with numerous inscriptions on stone. The Maya manuscripts are now largely unintelligible. The Aztec

consist principally of picture-writing, and have been interpreted with the aid of "translations" made soon after the Spanish conquest: but use is also made of phonograms, as described in Chapter I, for writing the names of persons and places. It seems likely that, if it had not been for the invasion, the Aztecs would have developed in time a fully phonetic script. But of more interest than the manuscripts, for the student of writing, are the elaborate, and often grotesque, inscriptions. These show a pre-occupation with one form of use—the noting of dates—which is without paral-

lel. The study of chronology was regarded as of great importance, and reached a remarkably high level of accuracy among the Mayas, so that it is calculated that the length of the year in their calendar was only .0002 of a day short of the true. It is usually presumed that the object of recording dates was mainly religious (e.g., to note the times of festivals, and of the foundation of sacred buildings), though Gann suggests that it was agricultural. An example of a Maya date is given in Figure 11, about which we may give only brief particulars

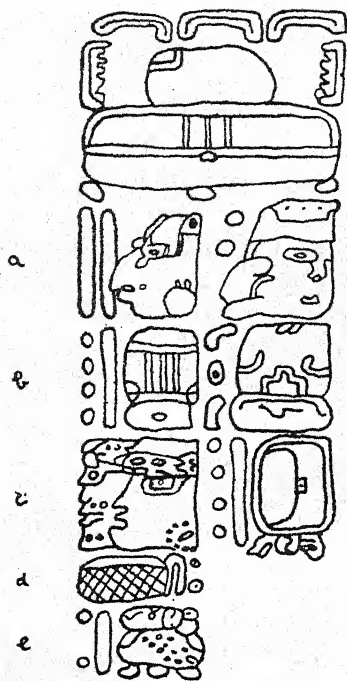


Fig. 11.—Maya date inscription. From the lintel of the Temple of the Initial Inscription at Chichen Itza, in Mexico.

here. The date in our example is given in the lines marked (a) to (e), reading from left to right the signs in each line (the first sign in (c) being here omitted). To the left of each sign (except in (d) to the right) is a numeral: a circle equals 1, a long bar 5. Each sign in the date from (a) to (c) stands for a period of time, ranging from the *bactun* of 144,000 days (the first sign in (a)) through the *katun* of 7,200 days, *tun* of 360 days and *uinal* of 20 days to the *kin* of one day (in (c)). The sign in (d) is for the name of a day, *muluc*; and that in (e) of a month, *zac*. The whole date reads: (a) 10 *bactun* 2 *katun*, (b) 9 *tun* 1 *uinal*, (c) 9 *kin*, (d) 1 *muluc*, (e) 7 *zac*, which roughly equals 3,989 years. The dates were all reckoned from some fixed point in the past (the date of creation in Maya belief): according to the system of the great authority Morley, our date here is about A.D. 620. Probably the signs for *bactun*, etc., were phonograms, so that they stood for persons and objects with names fortuitously resembling the several periods of time. The great symmetry of the writing is an obvious and typical feature. Note how the two circles are drawn off the vertical in sign (a) 2, in order to fill the oblong space: and also the purely decorative curves or circles (two in sign (b) 2, one in (d)) designed to prevent an awkward gap. Reading of the inscriptions is sometimes made more difficult by doubt as to whether a mark is decorative or functional.

§ 4

Cuneiform means "wedge-shaped," and is the name applied to the most important and extensive ancient script of the Middle East. Its original home was among the Sumerians, living at the Persian Gulf end of the Euphrates and Tigris valleys, and it came into existence before the end of the fourth millennium B.C.

It was not the earliest form of writing which the Sumerians possessed. Examples have been found, in the ancient sites once occupied by them, of two earlier forms—(a) a pictographic script in stone with easily recognisable signs of a foot, a man, pots, reeds, etc., and (b) a linear script in clay. These scripts, and cuneiform, are simply different ways of writing what is, from the historical viewpoint, one and the same system. The linear derives its name, as does the Cretan linear, from the fact that it consists of simply-drawn lines: the pictographic element has largely receded in the Sumerian linear, partly, no doubt, because it is much harder to draw careful pictures on clay. But clay remained the chosen material for the cuneiform which succeeded the linear. In that district it had the great virtue of being in abundant supply. Moreover, the local Mesopotamian clay has an additional merit for which we must be grateful: even when unbaked (as many of the written tablets are), it is almost proof against destruction by the elements. It is to this that we owe the extremely rich finds in cuneiform. If the material had been paper, as it was in Egypt, none would have been likely to survive in the damp soil of the river valleys.

Cuneiform writing gradually took the place of the linear style, and had already made its appearance by 3,000 B.C. The progress from the original signs, the pictograms, to the final conventional forms, can be clearly traced in many cases, thanks to the rich remains. Some examples are shown in Figure 12. The usual fundamental causes lay behind the change—the desire to have signs which could be easily and quickly written, and the spread of their phonetic use which made it unnecessary to recognise them as pictures of objects. There were also special causes here at work. The revolution of all signs through an angle of 90° has been mentioned previously. After clay had been in use as a writing material for some centuries, a special form of stilus (pen), made of

reed, was introduced: this made the characteristic wedge mark, ∇ , from which cuneiform takes its name. Finally, since clay was a difficult material on which to write in curves, only straight lines were permitted. The developed cuneiform owed its form chiefly to the clay on which it was written, but inscriptions on stone faithfully copied it.



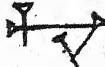
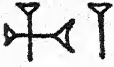
















Early pictogram	Later position	Early Babylonian	Assyrian	Meaning (original or derived)
				bird
				fish
				ox
				sun, day
				stand, go

Fig. 12.—Changes in cuneiform style (After Chiera).

Cuneiform as used by the Babylonians, and their fellow-Semitic neighbours the Assyrians, possessed an unwieldy number of signs, running into two thousand or more. But in normal practice it was possible to write with much fewer than this, and a basic stock of about 150, forming a phonetic syllabary, together with a collection of ideograms, served for such purposes as business and private correspondence. Unfortunately the cuneiform phonograms did not keep to the principle of "one sign, one sound": the fusion into one sign of a number of once distinct signs caused certain of them to have simultaneously several different sound-values. The reverse also happened, i.e., because of phonetic change in the language, one sound could be represented by several different signs. But we may presume that this did not greatly worry the users of cuneiform. There are good parallels to both in the current writing of English.

Notice must be taken of one special use of ideograms which has analogies elsewhere: their use as "determinatives." The determinative was a sign that indicated quite generally the sense of a more particular sign to which it was attached. For

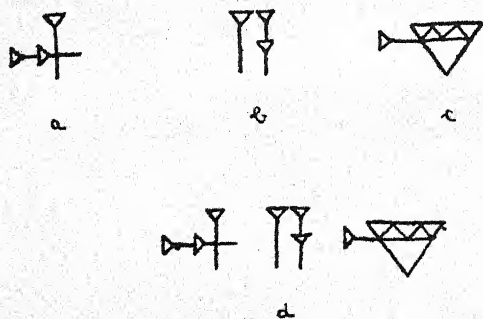


Fig. 13.—Use of determinative in cuneiform. Sign (a) is the determinative "god," (b) is the phonogram for the syllable a, and (c) for šur. (d) then gives the Assyrian way of writing Ašur, the name of the chief Assyrian deity: the first sign, the determinative, is not pronounced.

example, we might write the word for a species of tree, an *oak*, and add to it the word *tree* in order to make the sense of *oak* more plain. In fact we do not do that: but we have a close analogy to the determinative in the occasional use (more common in German than English writing) of the sign † before the name of a dead person. The determinative belongs only to writing, and is not represented by any spoken sound. In cuneiform it was used with the *names* of gods, men, countries, towns, rivers, trees and mountains; i.e., with words of a type that could easily be misunderstood. For suppose that a man's name was Kingfisher (like the leader of the first canoe in Myeengun's drawing, Figure 1). Clearly such a name, whether written with pictograms or with phonograms, could be misinterpreted as meaning the bird from which the man drew his name; or else it might be the name of something else, such as a river, etc. Since the script already possessed ideograms, it had lying at hand the simple remedy of attaching one of these signs to show in what sense the disputed sign was to be read. So the ideogram for "man" could be added to the sign for "Kingfisher." The spoken language, on the other hand, had to rely on the context to make the sense clear. Determinatives are found, on a more extensive scale, both in Chinese and in Egyptian hieroglyphic writing.

The use of cuneiform spread very widely in the Middle East, and among peoples speaking languages quite unrelated. The loan of it to the Akkadian, Babylonian and Assyrian Semites in the third millennium B.C. was possibly even preceded in time by its adoption by the people of Elam, living about Susa to the north-east of Sumeria. Before taking to cuneiform the Elamites had an ideographic script of their own, known as proto-Elamite. During the second millennium the cuneiform passed to the people of Mitanni, in N. Syria; to those living by Lake Van (the country of Ararat of the Bible, where Noah landed); and to the Hittites and other

peoples in Asia Minor. Its final loan was to the Persians (in the seventh century B.C. ?), who spoke a language of Indo-European stock (to which English also belongs). In their hands a great simplification of cuneiform was made. The shape of the signs became less elaborate, only a very few ideograms were kept, and a phonetic syllabary of under forty signs was created. Indeed it was almost an alphabet. Thus the signs for *p* and *b* were purely consonantal. But vestiges of the old syllabary remained. *d* was written in three different ways, according to whether it was followed by *a*, *i*, or *u*: this shows that the *d* sign was still partly syllabic, and that what was written was really not *da*, *di*, and *du*, but *da-a*, *di-i*, and *du-u*. The Persian cuneiform (known as Old Persian to distinguish it from Pehlevi, the more complicated script used later in Persia, and descended from the Semitic Aramaic) was the first of the three scripts used on the royal official inscriptions of the Persian empire, such as the great rock inscription of Behistun. The other two were Elamite and Babylonian. The use of these three scripts, recording the same text in different languages, may be seen in Plate III, a seal of that Darius the Great (king from 522 to 485 B.C.) whom the Behistun inscription commemorates. It must be recognised that the Persians almost succeeded in the remarkable task of making an alphabet. Historically, however, their achievement had little effect. Persian cuneiform had no descendants, and did not survive the Persian royal house of the Achaemenids.

§ 5

In China the art of writing was invented, according to the native tradition which may not be far wrong, about 2,500 B.C. The oldest surviving inscriptions are much later: these are written on bones found in Honan, called the oracle bones because they contain oracular statements, to which dates vary-

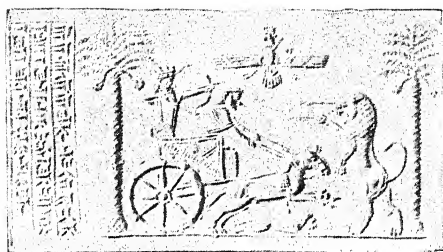
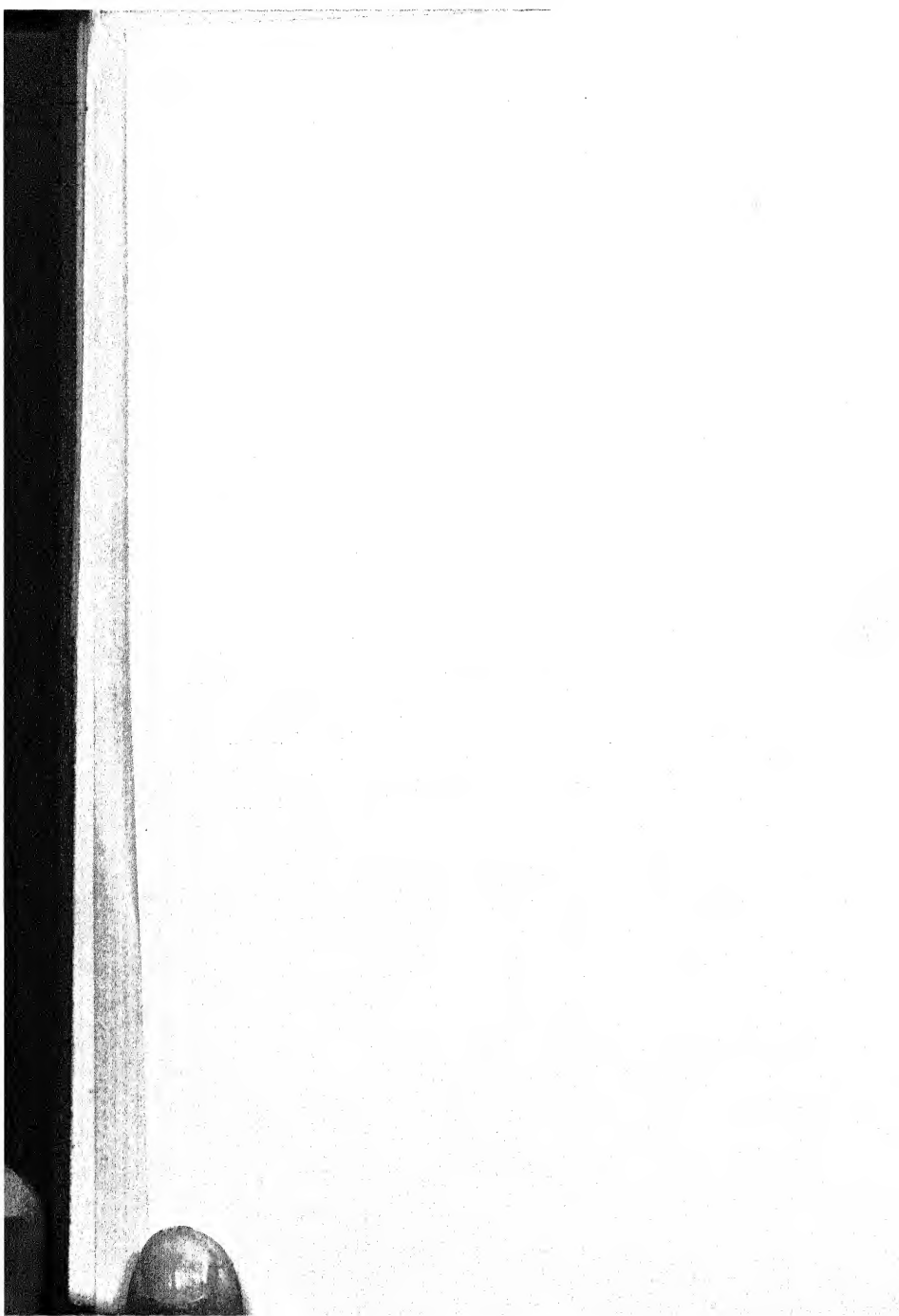


Plate III.—SEAL OF DARIUS. DARIUS IS SHOWN HUNTING A LION, WITH THE GOD AHURAMAZDA ABOVE. THE KING'S NAME AND TITLES ARE WRITTEN ON THE LEFT (IN VERTICAL COLUMNS) IN PERSIAN, ELAMITE AND BABYLONIAN.



ing between 2,000 and 1,400 B.C. are assigned. Some of the signs on the bones are clearly pictographic in appearance, but, as was the case with the earliest Sumerian signs, by no means all are recognisable as such. This should not lead us to deny them an entirely pictographic origin, but proves that a fairly long process of development already lay behind them at this stage. Phonograms occur even this early.

For a time it seems that Chinese writing proceeded to develop along the lines which have become familiar elsewhere, with the addition to its stock of more ideograms and phonograms. But then a serious and peculiar difficulty was met, in the nature of the Chinese language itself. It has been mentioned above that the language consisted of words of one syllable only. It is plain that such a restriction must very considerably reduce the number of possible words *with different sounds*—and the number was made even less by the prohibition of certain syllabic beginnings and endings. The result of the restrictions has been that in modern Cantonese the number of words with different sounds is eight to nine hundred, while in Pekingese (the most important dialect) it is as low as four hundred and twenty. There have, of course, been large

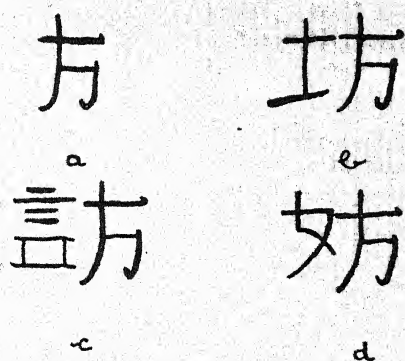


Fig. 14.—Chinese phonetic compounds.

changes in the sounds of the language, so that words are now homophones which were once distinct, and vice versa. But there is no reason at all to think that the number of available sounds was larger in the past. The position is eased in some degree by the existence of four tones, or ways of accenting words: but this does not go far to reduce the number of homophones. As an example of that number, the word *i* (pronounced with a falling accent) possesses thirty-eight distinct meanings.

The bearing of this linguistic fact on the development of Chinese writing is plain. It meant that the use of phonograms produced obscurity, just as if the Chinese had written *i* with our alphabet. Despite the difficulty, use was made of pure phonograms, especially in the pre-Christian period,¹ and uneducated Chinese continue the practice even to-day. Fortunately, a solution was found in a modification of the phonogram by a reversion to ideography. An ideogram was used as a determinative, but on a very much wider scale than was the case in cuneiform: together the ideogram and phonogram (here known as "radical" and "phonetic") formed a composite sign. Chinese has between twenty and thirty thousand signs of this type, representing about nine-tenths of its entire stock. In Figure 14 are examples of the phonetic compounds, as they are called. (a) is the character for *fang*, with the meaning "square": this was an old pictogram. The other signs stand for words of different meaning, but all with the sound of *fang*, and they are distinguished from *fang* "square" by the addition, in front of the phonetic character for *fang*, of radicals which suggest the meaning of each. Thus in (b) the radical means "earth" and the compound sign "street"; in other words, (b) tells the reader to

¹ Indeed, this use is more common in ancient texts than is generally supposed, even by Chinese scholars. It is hard to recognise, because it is first necessary to know which words were homophones in Old Chinese, and study of the sounds of that period is backward.

think of the word, pronounced *fang*, which is connected in meaning with the idea of "earth," or "place." In (c) the radical means "words" (which we saw in Figure 6), and the compound sign "inquire." In (d) the radical means "woman" (also in Figure 6), the compound "hinder."

The phonetic compounds had, then, phonograms for their base. There is, however, an important qualification to be made in describing them as essentially phonetic. When the signs were created, over two thousand years ago, they served to distinguish words which were homophones, which shared the same sound, *at that particular time*. Since then the pronunciation of many words has changed, so that some former homophones are so no longer. But the writing has not changed, and it might therefore be more just to regard the signs as now partially logograms, because their second constituents refer neither to the meaning nor to the sound of the words indicated.

The fixing of the Chinese script in a certain pattern so long ago has produced an extraordinary situation. The Chinese language, which was generally understood throughout China at the time when the script was formed, has in the course of centuries divided itself into a number of dialects, often distinct enough to be mutually incomprehensible. Even Pekingese, the standard form of speech, is known to only a third of the people of China. A Chinaman from the North could meet one from the South, and they would be unable to understand each other's speech. But they would understand each other's writing, since that is standard through all China. If they saw an official notice they could read it together, each one fitting to the writing the sounds of his own dialect. We could see a parallel in an Englishman and a Frenchman reading the times from a railway time-table: one would say the numbers in English, and the other in French, but the writing would be the same for both.

CHAPTER III

THE HISTORY OF THE ALPHABET

§ 1

There is only one alphabet, which has spread over almost all the world and has assumed a number of different guises but remains demonstrably the same. The sacred scriptures of the Hindus are written in the Indian Devanagari script, the Koran of the Moslems in the Arabic, the Old Testament in the Hebraic and the New Testament in the Greek—these scripts are all variations developed from the same original. They may be traced back to a group of slightly divergent Semitic alphabets, which were in use in the Near East, especially in Syria and Palestine, in the latter part of the second millennium B.C. From our point of view the most important of the Semitic alphabets was Phœnician, because from it came the Greek and hence the European forms.

So far there is little in what I have said to cause dispute. But the earlier history of the Phœnician script has been, and still is, the subject of controversy. Here there is room only to mention by name the main theories of its source, while looking at the most likely in detail. (1) Cretan Minoan, suggested by Sir Arthur Evans; (2) the Cyprian syllabary; (3) Babylonian cuneiform; (4) a series of conventional signs used widely for commercial purposes, etc., in the Mediterranean area, suggested by Sir Flinders Petrie; (5) Egyptian hieroglyphics. On the evidence at present available this last theory is by far the most likely one, and it has accordingly been adopted here. It should, however, be remembered that

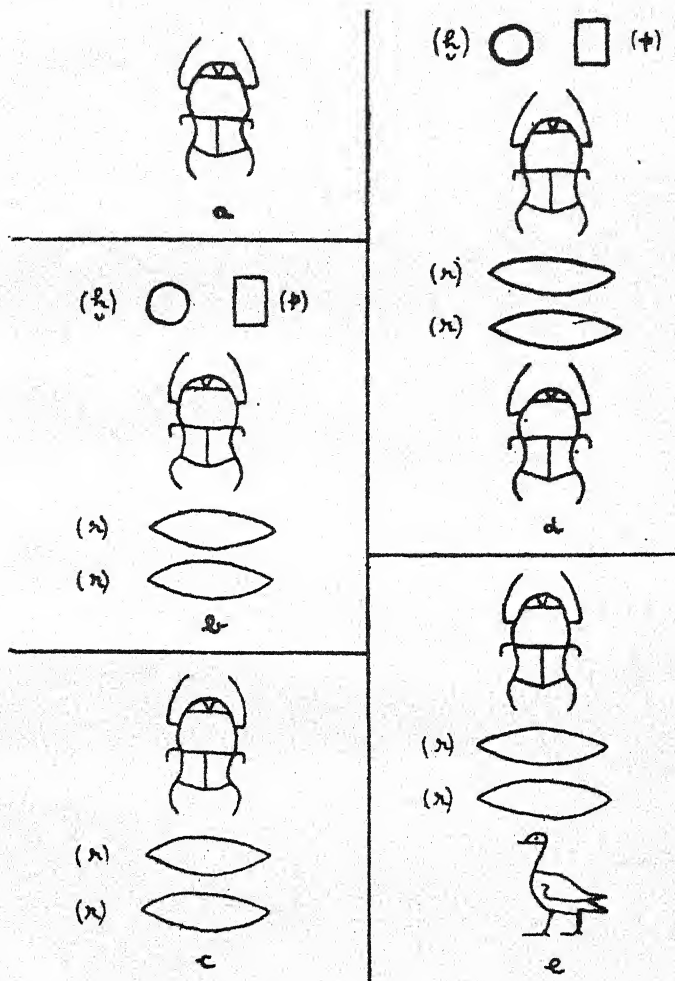


Fig. 15.—Egyptian writing of "beetle" (after K. Sethe).

fresh archæological finds ¹ may in the future compel a revision of view.

¹ See footnote on page 38.

§ 2

Egyptian writing consists of three scripts—the hieroglyphic and, descended from it, the hieratic and demotic. The most ancient, the hieroglyphic, may go back to about 4,000 B.C. The name, aptly given to it by the Greeks, means the sacred engraved writing.² Hieroglyphics were chiefly used for making important records on monuments, tombs and buildings, and for sacred purposes, and were carved out of stone or wood. They were also sometimes written with pen and ink on paper, and other comparatively soft material: the manufacture of paper from papyrus, which was a common plant in the Delta area, was in itself a highly important contribution made by Egypt to the development of writing. Paper is still the best material for writing on, though, of course, its vegetable basis is no longer the papyrus plant.

Hieratic was a cursive development of the written hieroglyphics. For everyday use it must have been found very laborious to form the beautiful but elaborate hieroglyphic figures, and so the need was felt for something simpler. This tendency is universal, and examples of it were given above (Figure 3). Demotic was yet another cursive form, made in the sixth century B.C. to replace the obscure hieratic then in use.

The hieroglyphic writing consists mainly of ideograms

¹ Such as the finding in 1929, at Ras Shamra in N. Syria, of a new alphabetic script with the same wedge-shaped elements as cuneiform. Its signs have the same values as the Semitic (i.e., those of consonants, but not of vowels). Its historical significance is not yet easy to appreciate: scholars have regarded it as being of Semitic "inspiration," in spite of its form, and even as a copy, in cuneiform style, of the Sinaitic alphabet (on which see § 3 below).

² The Greek name was *hieroglyphiká* (sc. *grámmata* "letters"). By extension we also find the term hieroglyphics applied to non-Egyptian scripts in which ideography is evident, e.g. Cretan, Aztec hieroglyphics, etc.





and phonograms. Its nature will become clearer from the examples in Figure 15. There are shown five alternative ways of writing *hpr*, Egyptian for "beetle." (a) is purely pictographic. (b) mixes phonograms with the pictogram: the two top signs stand for *h* and *p* (from left to right), then comes (reading downwards) the pictogram, and lastly the sign for *r* twice. (c) is a shortened version of (b), omitting *hp*. (d) is the same as (b), with the pictogram put in again at the end. (e) is a repetition of (c), but adding a pictogram of a duck, which is used as a determinative.


It is clear that there is considerable overlapping between different stages of writing here. Indeed, (a) is the only specimen which does not show it. If a simile may be allowed, this reminds us of a boy who wears water-wings while he learns to swim, but continues to wear them when they are no longer needed! The Egyptians could write phonetically and alphabetically, but never utilised fully the powers which they had.

The determinative we have already met in dealing with cuneiform. In Egyptian it served the same purpose of giving a purely generic representation, to assist in the interpretation of a word; and it was used in the first place (again as in cuneiform) with the names of persons, gods, towns and countries. But later Egyptians extended the use very considerably, and in the final stages few words (apart from particles) were written without one. Thus words of motion had a determinative attached, showing a pair of legs in movement; liquids, the sign for water; acts of violence, a man holding a club. The duck, shown in (e), was the determinative for flying creatures.

Hieroglyphics had a peculiarity which reminds us of the insertion of decorative marks in Maya date-signs for purposes of symmetry. The Egyptian cult of calligraphy led to change in the order of hieroglyphics in a word, so that they might

make a more agreeable pattern (e.g., the empty space below the beak, or above the tail, of bird-signs attracted smaller signs): and the consequent phonetic distortion was disregarded.

But the most important feature of the hieroglyphic writing was the presence of signs with the value of single letters, as in our alphabet. It came about probably in this way. Usually vowels were not marked in Egyptian writing: this was because the language used vowels mainly to distinguish between different words which shared the same basic idea—hence the reader could get this idea from the consonantal signs only, and could supply the required vowels from his knowledge of the context, according as a verb, noun, adjective, etc., was appropriate. Some words had only one consonantal sound in them, e.g., *ro* "mouth." The pictogram for "mouth" was . Thus as a phonogram  could be given the value of *ro*. But it was thought unnecessary to represent the vowel, and so , in this word containing one consonant, was regarded as standing for *r* alone. Further, if it could do so for this word, why should it not have the same value in any other word where *r* occurred? So  became a sign for *r* universally. By this method Egyptians acquired, in all, twenty-four signs which had the value of single consonants. That it was able to do this must be put down to the peculiar structure of the language, and the subordinate role that it assigned to vowels.

Mention should be made here of the theory of acrophony. This is, that an ideogram was given the sound-value of the *initial* letter of the word that it represented. Thus, we might take  as the sign for *apple*, and let it stand for *a*. Undoubtedly acrophony was of importance, and nowhere more than among the Semites. But its use by the Egyptians seems to have been relatively late and rare, and it would be a mistake to attribute to it their development of the alphabetical value of hieroglyphics.

In time Egyptian writing became over-complicated. For one thing, more than one sign was used for a single sound, as was described in Chapter I, § 6. This could be turned to elegant use. For example, the usual sign for / was a lion, and this could fittingly stand for / occurring in a man's name : but / in a woman's name might be better taken by the sign for a lotus. But its complexity was such that eventually it was given up in favour of Greek script when Christianity was adopted, and later of Arabic.

§ 3

It has already been mentioned that there were a number of Semitic scripts with alphabetic signs, from which the descent of present-day alphabets can be easily traced. The connection between the Egyptian and the Semitic scripts is more problematical, but was made reasonably certain by the discovery of a number of inscriptions in A.D. 1905 in the Sinai peninsula, bearing a series of signs of ideographic origin. They date from between 1800 and 1600 B.C. There are thirty-two separate signs, which may be reduced to twenty-four with eight variants.

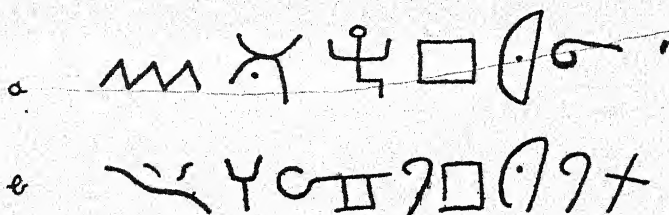


Fig. 16.—Earliest alphabetic writing from Sinai (after H. Grimme). These two inscriptions were found on the flanks of a model of a sphinx, now in the British Museum. They may be deciphered as (a) m' b b' l t (the final t being damaged), meaning "loved by Ba'alat (Baal)": (b) y w d l b' l t, meaning "votive offering for Ba'alat". Reading is from left to right. But this is all tentative.

	a	b	c	d	e	f	g
MEANING OF SIGN IN COLUMN 2	Egyptian	Sinai	Phoenician	South Semitic	Greek	Latin	Roman
1 Ox's Head					ΑΑ(a) Alpha	A	A
2 House					Β (b) Beta	B	B
3 Corner					ΓC(g) Gamma	C/G	C/G
4 Folding Door					ΔD(d) Delta	D	D
5 Rejoice, High					ΕΕ(e) Epsilon	E	E
6 Support					Ϝ(ϝ)/Υ(ϙ) Wau/Upsilon	F/V/Y	F/Y/U V/W
7					ΖΖ(z) Zeta	Z	Z
8		V.S. supra 			ΗΗ(ē) Eta	H	H
9					Θ (th) Theta		
10 Hand					ΙΙ(i) Iota	I	I/J
11 Plant					Κ (k) Kappa	K	K
12 Cord					ΛΛ(l) Lambda	L	L
13 Water					ΜΜ(m) Mu	M	M
14 Snake					ΝΝ(n) Nu	N	N
15 Fish					ΞΧ(x) Xi	X	X
16 Eye					Ο (o) Omikron	O	O

Continued on next page.

	a	b	c	d	e	f	g
MEANING OF SIGN IN COLUMN 2	Egyptian	Sinai	Phoenician	South Semitic	Greek	Latin	Roman
17 Mouth			𐤀 (p) Pe		Π (p) Pei	P	P
18			𐤁 (ts) Tsade		Μ (s) San		
19			𐤂 (q) Q'oph		Ϟ (k) Koppa	Q	Q
20 Head			𐤃 (r) Resh		Ρ (r) Rho	R	R
21 Mountain			𐤄 (sh) Shin		Σ (s) Sigma	S	S
22 Cross			𐤅 (t) Tau		Τ (t) Tau	T	T

Fig. 17.—The descent of the alphabetic letters. For Phoenician and Greek the sound-values of the signs are given (in brackets) and also their names. Alternative forms of signs are given where of importance: where these are separated by a slanting stroke, difference in sound-value is indicated.

Obviously the signs are phonetic—an ideographic script could not possibly manage with so few. Translation of the inscriptions is so far hazardous. A. H. Gardiner was the first to see their importance: he published them in 1916, and has read in them the name of the goddess Ba'alat, with whose temple the finds are associated.

The value of the Sinaitic signs lies in these facts—(1) they can all be regarded as developed from the forms of Egyptian hieroglyphics, with but slight modifications; and no other obvious developments from the hieroglyphics have been found anywhere else outside Egypt; (2) on the other hand they are similar to Semitic signs, most closely so in twelve instances; (3) their age, and the place of their discovery, are such as might be reasonably expected in an historical intermediary between the scripts of the Egyptians and the Semites.

The reader can judge the truth of the statements at (1) and (2) for himself by examining the attached Table (Figure 17). Its purpose is to attempt to show the line of descent of the letters of Western Europe known as Roman, starting with Egyptian hieroglyphics in the first column. It is vital to its understanding to remember that it illustrates the similarity of *forms* of letters, but not necessarily of their values in *sound*. For example, we have already met the hieroglyphic in line 17, and know that it stands for *r*: but the value of the sign in Phœnician, Greek, Latin and Roman is *p*.

How did this change in sound-value come about? The signs are all ancient ideograms, which represented objects. At the left of each line the relevant object (where known) is named—e.g., line 17, "mouth." The Egyptian word for "mouth" was *ro*. But the Phœnician was *pē*; and hence the value given to the sign in Phœnician was that of the first letter of this word, i.e., *p*. In the same way, according to the principle of acrophony, all the signs in Semitic acquired their values. It must, however, also be noted that the Semitic sound-value (indicated in brackets for each Phœnician letter) has not always been kept by the sign in other languages. This is true above all for the signs which became vowels in Greek, but also applies to some other letters. Thus the third letter had the value *g* in Semitic and Greek, and in Latin for a time stood for both *g* and *k*: then Latin produced a slightly different form, *G*, for the *g* sound. In the Table both Latin *C* and *G* are placed as descendants of Phœnician *gimel*; but the slanting stroke between them is to show that they had different values.

The Semitic names of the objects originally represented by the signs were also used as the names of the letters.¹ When the Greeks borrowed the Semitic alphabet, they also took over the Semitic letter-names. The names of the first two

¹ It must however be noted that, out of twenty-two letters in the Semitic alphabet, five have names which are now unintelligible.

letters were *āleph* and *bēth* in Semitic, *alpha* and *bēta* in Greek—from them derives our word *alphabet*. Incidentally, the fact that the Greeks used Semitic names is one of the strongest proofs that they did derive their alphabet from the Semites. In Greek the names have no meaning.

The Semitic alphabets can be divided into two main groups—the northern, including the Phœnician, Hebrew and Aramaic, found in the area of Syria, Palestine and Cyprus, and the southern, occurring as far south as South Arabia, and to the north in the region of Damascus. In some letters the southern forms are more like the Sinaitic than the northern are, and for this reason they are represented in the Table as

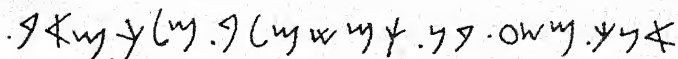


Fig. 18.—*Inscription from the Moabite Stone. The stone carries an inscription in the Phœnician language, written in the Semitic alphabet, and dates from the first part of the ninth century B.C. It gives a version of the rebellion of King Mesha of Moab against the Israelites, as prepared by the king himself: the story of his opponents is in II Kings iii. The letters shown come from the start of the inscription and are read from right to left. They are: 'an(o)k(i). m(e)sh'(a). b(e)n. k(a)m(o)sh m(a)l d. m(e)l(e)k. m(o)'a b. "I am Mesha, son of Kamoshmald, king of Moab."*

well as Phœnician. The oldest example of Semitic yet found (at Byblos in North Syria) dates from the thirteenth century B.C. All the scripts agree in having originally no signs for vowels.¹ This feature strikes us at once with its resemblance to Egyptian, and the reason why it was tolerated is the same, that vowels played only a secondary part in the language. Thus *bēth* stands not only for *b*, but also for *ba*, *bi*, *bu*.

The Semites used their alphabet exclusively, and did not, as the Egyptians had done, combine it with ideographic writing. Because of the absence of vowel signs (which the

¹ It should be explained that Nos. 1 and 16 are consonantal in Semitic, in spite of appearances, and stand for breathed consonants which have no counterpart in our speech.

Semites themselves in time felt obliged to remedy), it was not yet the fully developed instrument that it might be. But it is proper that we should recognise the measure of their achievement in having been the first people to produce a script in the form of a self-contained alphabet. It entitles them to be regarded as chief creators of the alphabet.

§ 4

Of those who took over the Semitic alphabet, the Greeks naturally have chief claim to our interest, since it was through them that the Roman line of tradition next passed. It is generally held that the Greeks took their letters from the Phœnicians—certainly it was from some member of the northern group. The date of transmission, which may well have been indirect—say, through Asia Minor, was perhaps in the eleventh or tenth century B.C. The Greeks turned certain of the Semitic consonant and semi-consonant signs (representing Semitic sounds for which they had no parallel) into vowel signs, and so made signs for *a e i o* and *u*. The finally developed Greek alphabet was not without fault as a phonetic medium, since it did not distinguish between the long and short sounds of *a i* and *u*. But it was reasonably accurate, and a big improvement on Semitic because of the inclusion of vowels.

The reason why it was desirable that the Greeks should change the Semitic alphabet, by giving new values to some signs, and by creating others (e.g., that for *ph*), was that the Greek *language* had a system of sounds and a structure different from those of Semitic. It may be said that a system of phonetic writing generally requires alteration, when it is taken from the speakers of one language by the speakers of another.

There is no space here for detailed study of the individual letters of the alphabet. But mention must be made of one

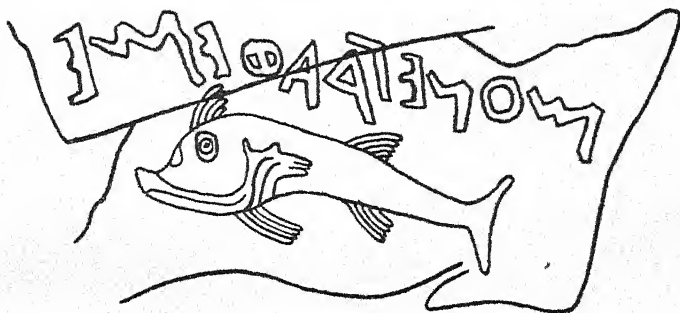


Fig. 19.—Early Greek inscription. From Crete, written from right to left. It reads: *-mon egraphe me*, “*-mon drew me*.” The first part of the name *-mon* is missing. There are no divisions between words.

more innovation of the Greeks which altered the appearance of a large number of them. The ancient Egyptians arranged their hieroglyphics (a) in vertical columns, like the Chinese ; (b) in line from right to left ; or (c) in line from left to right. When they wrote according to (b), they drew the figures so that they faced towards the way from which the eye was coming, i.e., to the right ; and when according to (c), the figures were completely reversed and looked to the left. The Semites wrote their letters in line from right to left, and the earliest Greek inscriptions (early eighth century B.C.) followed suit. Then the Greeks tried for a time a style called *boustrophedon*, after the way an ox ploughs—one line would run from right to left, the second from left to right, and so on changing with each line. At last they decided on the left to right method, and this stayed in favour.¹ Its adoption meant that in Greek the individual letters, in so far as they are reversible, are turned the opposite way to the Semitic.

¹ It is interesting to note that Herodotus (Bk. ii. 36) remarked that the Egyptians moved their hands from right to left in writing “instead of going like the Greeks from left to right.” Apparently he did not know that the Greeks did the same as the Egyptians only a few centuries before his time (fifth century B.C.).

Little need be said of the part played by the Romans, who took over the Greek alphabet through the medium of the Etruscans. No fundamental changes remained to be made by them, but in their hands the letters were given the shapes which have remained ever since a standard for symmetry and dignity. In one important respect they failed to make a lasting reform where one was needed—in the signification of long vowels. The Greeks had not invented all the signs necessary for short and long vowels in their language: but at any rate they could show long *e* (H) and *o* (Ω). The Romans used no Ω, while for them H stood for *h* (as it does for us). So the Latin alphabet had only the five vowel signs A E I O V. Various methods were tried experimentally to indicate increased length of pronunciation, such as the placing of marks above the letters (known generally as the use of diacritical

WMVNIOW.E.D.F.BE.F.BE.ABDEKEDVMWSIOI

Fig. 20.—Early Latin inscription. This is the oldest Latin inscription, written from right to left on a gold brooch found at Praeneste. Probably of seventh century B.C. It reads, *Manios med fbefbaked Numasioi*, "Manios made me for Numasios." Note that two letters, *fb*, are used for the single sound later represented by *f* alone. Points mark off the words, and also the first part of the reduplicated *fbefbaked*.

signs), and writing them double. But none remained in favour. As a result, a text of Latin can be read with phonetic accuracy only by someone with a good acquaintance with the language, except, of course, where the modern publisher inserts marks of length for the sake of convenience. There are other Italic dialects related to Latin, in particular Oscan and Umbrian, which use special alphabets similarly taken over from Etruscan. Their written forms show the same endeavour to discover a way of indicating vowel length; and they too may be judged to have failed, since they did not evolve a system satisfactory enough to be universally adopted.

§ 5

The modern Roman alphabet descends in an unbroken line from the Latin. The changes that are embodied in it can be seen in the Table, and it is not proposed to say more of it here. Nor shall I enter into the history of the cursive development of the Latin letters which produced the minuscules—the small letters which form the great bulk of our handwriting and of printed books, and of which the mainspring was the desire to write without lifting the pen after every letter. But space must be found for mention of two alphabetic systems of quite different appearance from Roman and from each other, which have special connection with this country. They are the Runes and Oghams.

Runes are the native Germanic form of the Greco-Roman alphabet, and the earliest belong to the third century A.D. The place of origin is uncertain, and even whether the Greek or the Latin script is the source. The signs are notably angular and free from curves, suggesting that they were at first carved in wood. A few Runic inscriptions have been found in Germany, but the great majority occur in Scandinavia, the north of England (Northumbria and Cumberland) and the Isle of Man, from the seventh century onwards. One additional point of obscurity is the peculiar order of the letters, which run : f u θ a r k g w h n i j p e z s t b e m l n g o d. The alphabet was sometimes called "futhorc" after the first six letters (the third letter stood for *th*, the fourth for both *a* and an *o*-sound), as we say "alphabet." Incidentally, it may here be mentioned that the order of letters in our alphabet, which is descended from the Semitic order, is itself still unexplained.¹

¹ According to J. L. Myres (*Man*, Sept./Oct., 1942, vol. xlii, article 63), the Semitic order is based on a division into groups of five letters. The five in each separate group belonged to distinct phonetic categories and followed a fixed order (e.g. the first letter in every group was a weak guttural, which became a vowel in Greek), and were also clearly distinct in letter shape. This he would connect with an ancient system of counting in fives.

Plate IV shows one face of a whale-bone box known as "Frank's Casket," now in the British Museum, which has Runic inscriptions in Anglo-Saxon of the eighth-ninth century A.D. The illustration is of the finding of Romulus and Remus, the famous twins of Roman legend who were suckled by a she-wolf. The inscription, running round the four sides of the box, is : othlæun neg romwalus and reumwalus twœgen gibrothær a fœddæ hîæ wulif in romæ cæstri : i.e., "outlay (there were exposed) nigh (close together) Romwalus and Reumwalus twin brothers : fed them a she-wolf in Rome city." For the sake of comparison, here is the top line on the box, with Roman transcription :


 ROMWALUSANDREUMWALUSTWŒGEN

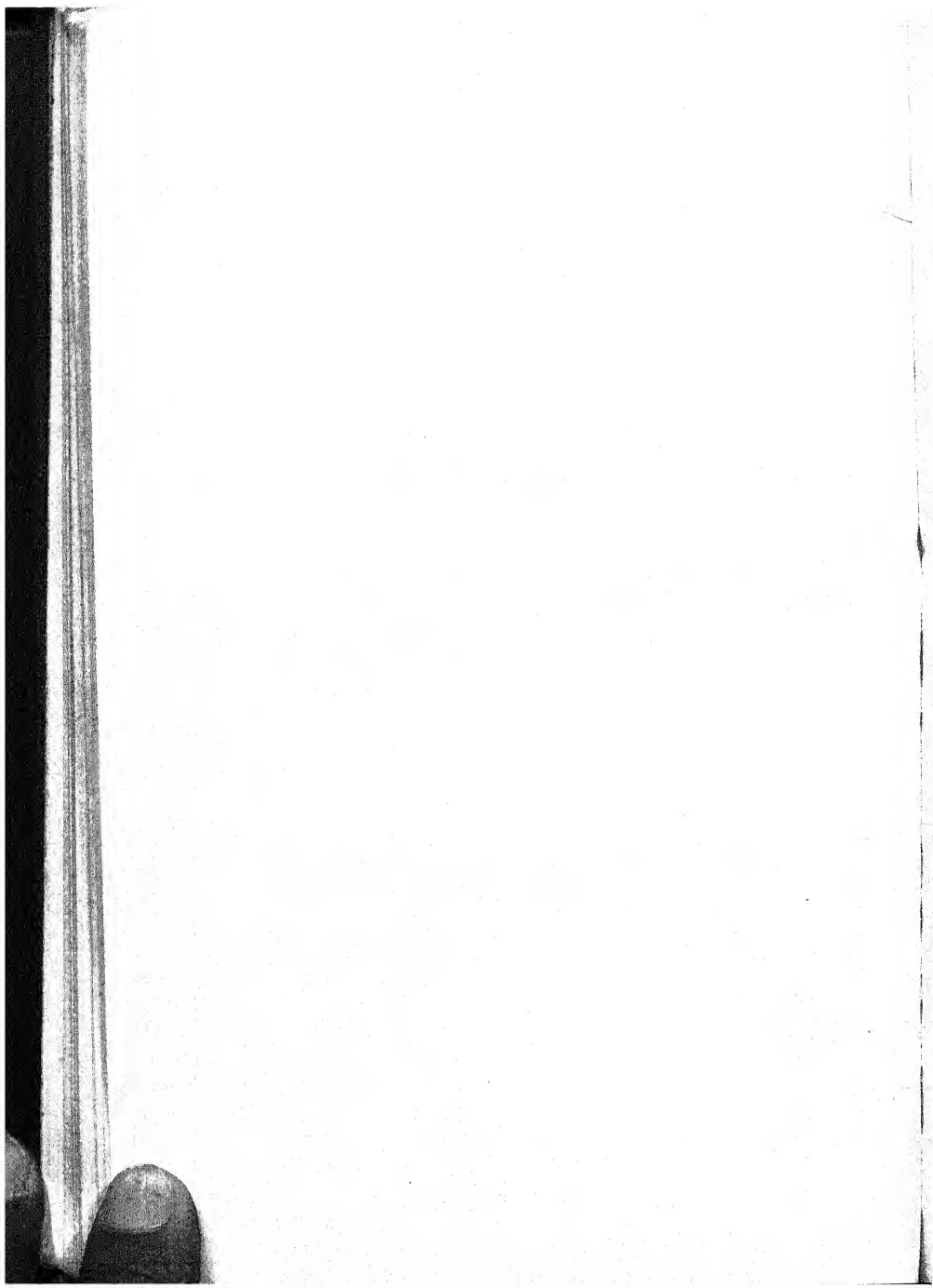
Oghams were used only for writing Celtic, and are not found outside the British Isles, where they occur in Ireland, Wales, and also in parts of Scotland and South-west England. They date from about the fifth century A.D. They are formed quite regularly, by adding one to five side strokes in different ways to a horizontal base. The scheme is as follows :

h	d	t	c	q	b	l	v	s	n
m	g	ng	f	r	a	o	u	e	i

Oghams are generally said to be descended from Runes. But this seems highly unlikely. Ogham writing has rather the appearance of a rationalised attempt at creating a phonetic script *de novo*. It is not, so far as we can see, perfectly scientific in its groupings, but the classification of the five vowels is



Plate IV.—FRANK'S CASKET. THE RUNIC LETTERS RUN FROM LEFT TO RIGHT, BEGINNING AT THE BOTTOM LEFT AND GOING UPWARDS. THE LETTERS IN EACH LINE HAVE THEIR BASE TOWARDS THE CENTRE OF THE BOX: THUS, IN THE BOTTOM LINE, WHICH IS TO BE READ LAST, THEY ARE UPSIDE DOWN.



notable.¹ The value of one or two of the signs is also a little doubtful, which makes it harder to judge the logical merits of the script.

§ 6







It will be convenient to make some remarks here on other forms of the alphabet which are not in the line of descent of Roman.

The alphabets used by certain Slavonic peoples descend from the Greek direct, without the intervention of the Latin. The earliest form was the Glagolitic (named after *glagol* "word"), used by Croats in the seventh century A.D. Of greater importance is the Cyrillic, which is the foundation of the forms used in Eastern Europe and Russia to-day. This was, according to tradition, the creation of St. Constantine, named Cyril, in the ninth century. The number of letters in it has varied at different times, the maximum being forty-eight. It was devised specially in order to meet the peculiar needs of the speakers of Slavonic languages, which had sounds (especially a large number of sibilants and affricates) not lending themselves to reproduction with the unaltered Greek letters. The work required the invention of a number of new letters, and the resultant script was a great improvement as a phonetic transcription. Descendants of Cyrillic are the Russian, Serbian and Bulgarian alphabets.

The group of Slavonic-speakers who use the alphabets just described are members of the Eastern Orthodox Church. This fact is important, because another large group of them belong mainly to the Roman Catholic Church, i.e., the Czechs,

¹ Because the vowels, being recognised as a special form of sound distinct from the consonants, are all grouped together as they should be. By what was, possibly, a lucky accident, the makers of oghams also arranged the vowels in an order which suggests the classification of phoneticians into the two series (i) *a o u*, which starts with the central vowel *a* and proceeds to the back vowels *o u*, and (ii) *a e i*, which proceeds to the front vowels *e i*.

Slovenes and Poles, and because of the religious distinction the latter use entirely different scripts which are modified forms of the Latin alphabet.

The Arabic alphabet is a direct descendant from the North-Semitic Aramaic, which has in the course of time developed a highly individual appearance. The letters are extremely cursive: but though they are graceful and easy to form, they have too few clearly distinct shapes, and have to rely on numerous diacritical marks. This expedient is better used more sparingly. For example, Arabic has  *y*,  *b*,  *n*,  *t*,  *th* (as in English *thin*); and Persian adds  *p*.

Yet another offshoot from Semitic writing was the alphabets of ancient India, Kharoṣṭhi and Brahmi. It is generally agreed that the former was of North-Semitic origin: there is dispute between the claims of North and South to have given rise to the latter. Probably from Brahmi comes the standard script of modern use, Devanagari. Really these scripts should be called modified syllabaries rather than alphabets, and show what might have been the history of our own script if the Greeks had not developed vowel signs. When the Indians acquired the Semitic writing, they were faced with the same need as the Greeks: they also spoke an Indo-European language, which would be too ambiguous in written form if no vowels were shown,¹ but the script contained no vowels ready made. As we have seen, the Greeks got over this by making vowel signs for themselves. The Indians, instead, decided to use each simple consonant sign as standing for that consonant *plus a*. In this way they had signs for *pa*, *ba*, *bha*, *ya*, *ra*, etc.: and this method was the

¹ In illustration of this, Pedersen tells a story of an Indian who sent his relatives a letter, in which vowels were not shown (in accordance with occasional commercial practice). This was read as "Uncle died to-day, and Aunt beats her breast." But, while the recipients were lamenting, a friend pointed out that the true meaning was no doubt "Uncle has gone to Ajmir, and Aunt is in Kot."

more convenient since *a* was by far the most common vowel in the language, having taken the place of the former simple vowels *e* and *o*. Other vowels were shown by adding marks to the consonants, and to this extent the syllabic nature of the writing was modified. Finally, there was the problem of the consonant not followed by any vowel, such as the consonant at the end of a word. The normal course adopted by syllabaries was to write this as if it were in fact followed by a vowel: the Cyprian system, for example, added an *e*. The Indian solution was to combine the consonant sign with the next sign following. This was done even at the end of a word, quite simply, because no distinction was made between words in a sentence. Where a final consonant ended a sentence, then only a special sign was put in which showed that no vowel was to be read.

Eventually even the Semitic scripts found it desirable to adopt a system for showing vowels, similar to the Indian. Present-day Arabic puts marks above or below the signs, standing for the short vowels, and another to indicate a consonant by itself. But all these marks are not used except when there is special desire to be unambiguous.

To close this section, we may briefly refer to Ethiopic, a script descended from the South Semitic, probably from Sabæan (Saba is the country of the Biblical Queen of Sheba). The vowel problem was settled in this way. The Semitic consonant signs were used for consonant *plus a* (as in India): special marks were added for the other vowels—but, instead of remaining separate like diacritical marks, they coalesced permanently with the consonant signs. The result was that *ba*, *bi*, *bu* were each represented by single and separate characters, and there was thus a complete reversion to syllabic form.

It is only when we realise that there were these other attempts to meet the problem of showing vowels that we

can see the debt that we owe to the Greeks in proper perspective. That gifted people immediately hit upon the best and simplest solution : and only they discovered it.

§ 7

The more important of the Semitic scripts and their descendants are shown in the Table (Figure 21), together with others to which reference has been made above. Ogham is not included, because of the doubt as to its origin.

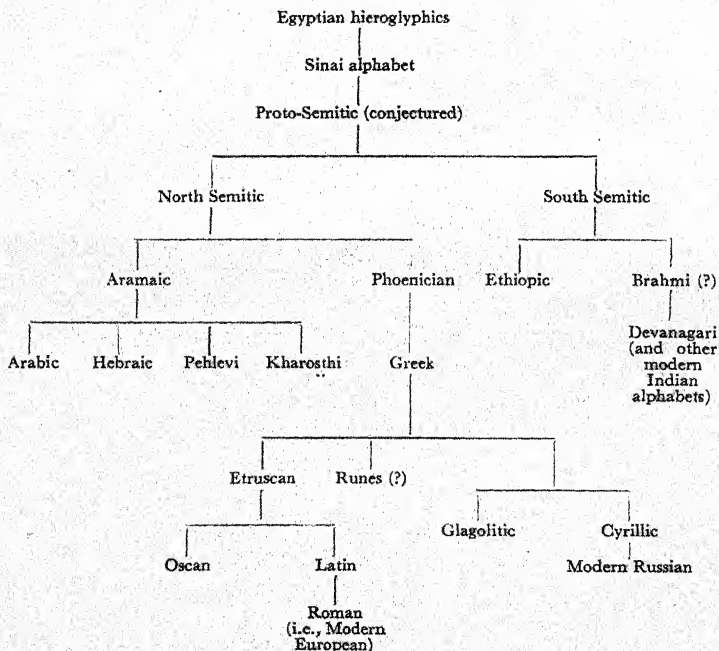


Figure 21.—The descent of the alphabetic scripts.

CHAPTER IV

THE FUNCTIONING OF WRITING

§ 1

The purpose of all writing, including picture-writing, is to serve as a means of communication. In fulfilling this purpose different systems function, as we have seen, in different ways, and they achieve success in varying degrees.

Picture-writing has the merit of making a vivid appeal to the eye, which is very quick in its effect. With many people, too, whose memory is stronger on the visual side, a picture stays in the mind more easily than words. Thus a combination of written word and picture, together, has the best chance of leaving a lasting impression, each supporting the other. The use in newspapers of cartoons as commentaries on the news of the day, and of illustrated advertising matter (and also, of course, of photographs) abundantly bears out the fact.

There are, however, severe limitations on the use of pictures for communication. Quite apart from the inherent difficulty or impossibility of illustrating many concepts at all (for example, that contained in the preceding sentence!), it is possible to forget what the picture means; and a person who has never previously seen it, nor had it explained to him, may find it hard to interpret. The cartoon in this morning's paper is perfectly and quickly intelligible to us, even without a caption. But not so the cartoon from the paper ten years old.

Where picture-writing has been the only form of writing, as among the American Indians, it has been used for such important tasks as recording treaties and laws. Necessarily, the pictures here could be no more than bare mnemonics.

So an American "wampum" belt records a treaty between William Penn and Indians by showing the figures of two men clasping hands. It shows that one of the men was European by his wearing of a hat (compare Figure 2, No. 9). But there is no further indication of their identity, nor of any of the details of the agreement. Clearly the meaning of such a record is lost for ever when once it is forgotten. A French explorer, Capt. Cadillac, reported in 1703 that an Indian chief told him that his tribe had a wampum collar, which they had received from the Iroquois, but that "the old men had forgotten what it said." Normally a disaster of this sort was prevented by taking certain precautions. The belts of a tribe were kept together, in a kind of Record Office, under the charge of a "Keeper of the Wampum," who possessed a good memory. At regular seasons the tribesmen would meet, and then pass round the belts from hand to hand, at the same time all repeating aloud the official version of the event which each recorded.

Pictography ran the same risk of having its meaning forgotten. According to tradition, the people of Easter Island used to meet once in each year, to hear what was recorded in the ancient wooden tablets which bore their pictographic writing. These told of genealogies, and legends of the land from which their ancestors had migrated. Understanding of them was confined to the native royal family and a few other individuals, including priests. In 1863 Peruvian slave-traders came to Easter Island, and carried off all the leading people; and later there arrived Catholic missionaries, who burnt numbers of the tablets because of their pagan origin. The net result was that no one could read those that remained, and the native culture of the people came largely to an end. It seems, then, that the efficacy of picture-writing as a self-contained and unassisted means of communication depended on the maintenance of an unbroken tradition, and on the

existence of good memories. It must be granted that the memories of illiterate people are often more highly developed. The poems of Homer, as of other ancient poets, were recited by bards from memory, without the aid of writing. The advent of writing proper caused a relaxation in the cultivation of memory, which was at first regarded as a regrettable loss. In New Zealand the Maoris opposed the introduction of writing because they feared the effect on memory, and Cæsar (*B. G.*, vi. 14) gives this as one reason why the Druids would not put down their religious lore in writing. The question is considered also in Plato's *Phædrus* (275), where it is suggested that the use of writing makes it easier to recall facts to mind when required, but destroys the true and intimate knowledge that come from perfect memorising. But we need have no doubt that in fact the easing of the burden on the memory has been for man an unmixed blessing. Writing has extended the scope of the memory both of the individual and of the race.

Despite the disadvantages from which it suffers, the merit of picture-writing assures for it a permanent place when used as an adjunct to phonetic writing and, by itself, when conveying simple messages. The same applies to ideography. Thus the latter is regularly used in public signs which are meant to arrest the attention—e.g., in the current traffic-signs denoting the presence of a railway level-crossing, crossroads, a school, and so on. Phonetic writing could never drive home its meaning so quickly.

Ideography has also entered our writing-system proper, especially in the case of the numerals. Those most commonly used by us, the Arabic, have probably reached us via Arabia from a starting-point in India. The first three of them (1 2 3) have been plausibly explained as developed from simple horizontal strokes,¹ in which each stroke stood for one: a cursive

¹ Note that Chinese uses such strokes for 1, 2 and 3.

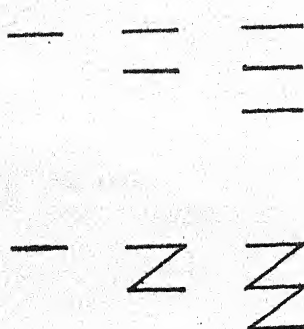


Fig. 22.—Origin of three Arabic numerals.

form of writing led to the joining up of the once separate strokes (Figure 22). Here again the ideogram retains its place by the quickness of its appeal, which is especially noticeable when we compare the full phonetic version of long and elaborate numbers: contrast 1,734,251 with "one million, seven hundred and thirty-four thousand, two hundred and fifty-one."

§ 2

The peculiar nature of Chinese writing has already been explained. Mainly ideographic, it contains about thirty thousand signs, but knowledge of four thousand, which represents a high average, is enough for most purposes. It is independent of the spoken language, so that the signs have remained the same for thousands of years, while the spoken words have altered and have, in different dialects, become differentiated.

It is natural for Europeans, when they see a script with such alarming proportions, to ask why the Chinese do not abandon it in favour of something more simple, such as our own alphabet. The great labour involved in China in the task of merely learning to read has always been a grave handicap on the spread of education, and consequently on the improvement of conditions in the country generally.

To this the Chinese reply that for them their script, despite its admitted difficulties, possesses advantages that no other system would bring them. Naturally they would in any case

be reluctant to abandon the characters which are not only their own national possession and enshrined in their tradition, but are also beautiful beyond any other script now in use. Calligraphy has always been held in the highest esteem in China : indeed, landscape-painting is really to be regarded as a branch of writing, and landscapes often include written texts from poems on account of the beauty of the script as much as for literary reasons. Our alphabet has in comparison a plain and matter-of-fact appearance.

But there are more practical reasons. The Chinaman who has learnt to read is equally at home with a government notice of to-day and with the literature that reaches back for over three thousand years. The writing is materially the same, though the language is not. Now this is a most peculiar situation. Contrast what happens with a phonetic system of writing. In ancient Greek there is a period of only five or six centuries between Homer and Aristotle, yet the language changed considerably in that time. The student who knew only the Greek of Aristotle would find himself at once in difficulties with that of Homer, in respect of the vocabulary, the sounds and the grammatical forms. And he would suffer in the same way if he turned to other Greek works closer to the time of Aristotle, and even some contemporary with Aristotle if they were written in a different literary dialect. His difficulties would all arise out of distinctions in the spoken form of the language : and since the writing is based on the spoken form, and simply reproduces all the distinctions, it can do nothing to remove them. Admittedly Greek is an extreme example, because of its great diversity. We can, however, see a similar result in English. It is impossible for us, without special training, to read and understand Beowulf, or even Chaucer : their language is different, and therefore so is the written form of it. The Chinese language, on the other hand, has not undergone such striking changes,

because of both the relative isolation of the country and the almost complete absence from the language of grammatical forms. None the less, the process of sound change has created a number of modern Chinese dialects, which are sufficiently unlike to prevent the speakers of one of them from readily understanding the others, or the ancient texts, when spoken aloud. This is where the value of Chinese writing makes itself felt, by transcending the speech barriers.

Thus the writing allows the Chinaman (if he can read at all) to enjoy the knowledge of his ancient texts—a knowledge which has significance in Chinese life that is not easy for us to estimate. Further, it has administrative advantages: in the absence of a universally known standard form of speech, it can provide a common medium.

One more point must be mentioned. If the native Chinese script were abandoned, the alternative would, of course, have to be a phonetic alphabet. But this would only create new troubles. The language has so few sounds that it possesses a great number of homophones: thus, *i* has in Pekingese sixty-nine meanings (i.e., is properly sixty-nine different words), and, though the use of four tones reduces the number of exact homophones, there are still thirty-eight meanings of *i* with a falling tone. Hence a phonetic transcription—and several methods have been proposed—would produce a lot of confusion. Of course, this could be borne, just as are the homophones in the spoken form¹; but the Chinese have considered, at any rate up till now, that this, and the other objections, are serious enough to justify them in keeping to their old script. The phonetic transcriptions are, in the present

¹ Modern colloquial Chinese speech has, however, done much to surmount this difficulty by creating compound words (e.g., of the type "look-see") and other devices. Hence phonetic writing of the literature would be more suitable, if the literary language were translated into one of the modern colloquials. But there is no agreement as to which one this should be; and the task of translation would be heavy.

stage, of more use in introducing Chinese to foreigners, and in contacts between the latter and Chinese people.

§ 3

The essential feature of the alphabet is its ease and simplicity in use. We say "As easy as A.B.C." No one ever said "As easy as Chinese ideograms, or Egyptian hieroglyphics." On the contrary, hieroglyphics have become a by-word for something abstruse and undecipherable.

There is only one complaint to be made against the alphabetic system in principle. It is founded on the idea of abstraction, of separating what we know as vowels and consonants from the smallest spoken element, the syllable. Thus the most common units of the alphabet, B and C and the rest of the consonants, are intangible things. There are some gases which, when mixed together by the chemist, produce a liquid: you might not know that the gases were there while they were separate, but the resultant liquid is tangible enough. Our consonants are like them: you are first really aware of their existence when you see them at work in a syllable. In order even to name them you must put them into syllables specially formed, *bee* and *cee*, etc. Therefore, when you learn the letters of the alphabet for the first time, you acquire knowledge that is not immediately useful. Teachers try to get round this by telling their children that A is for "apple," and so on: but of course it is not true. A, being a vowel, does indeed stand for a sound which can be pronounced. But what of B?

It is said that the Chinaman finds this a stumbling-block: as he learns his own script, every sign is at once useful and has meaning. The same holds good in a syllabary, such as cuneiform, and to this extent a syllabary is an easier system in the initial stages. The fact is borne out by the experience

in the nineteenth century of a Christian missionary, the Rev. James Evans, who worked among the Cree Indians in the far north of Canada.¹ The Crees lived chiefly by trapping, and were nomadic, so that they did not remain in the same place for more than a very few days. Evans found it impossible to teach them all the alphabet in the short time available on any occasion, and by the time they came back again they had forgotten what he had taught them, and he had to start afresh. Accordingly he set to work and devised a syllabary of thirty-six principal signs. These consisted of nine basic forms, each of which was written in four different positions in order to express the four main vowel sounds of the language. Figure 23 gives examples of them. Evans himself

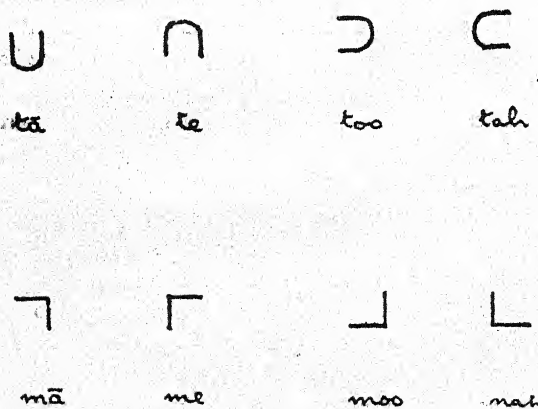


Fig. 23.—The Cree syllabary.

wrote in his Journal, December 3, 1840: "The short time which is required to learn to read and to write, arises from there being no such thing as learning to spell, every character in the alphabet [*sic*] being a syllable, so that when these are

¹See *The Apostle of the North*—Rev. James Evans, by E. R. Young (1899).

learned, all is learned." The Cree syllabary has been printed, and modified forms of it have been adopted by other tribes. The Cherokee and Fox Indians have also used scripts of the syllabic type.

There is, however, no doubt that ultimately the alphabet is the best instrument for all-round use, especially wherever it is necessary to designate words with groups of consonants and with a large variety of vowel sounds. It is noteworthy that the creators of new, international languages—such as Volapuk, Esperanto, Ido and Interlingua—have all used the Roman alphabet, varied very slightly by diacritical marks. Phoneticians have been dissatisfied with the Roman alphabet, which is by no means large enough to express with accuracy all the sounds occurring in, say, the modern languages of Europe, or even of English alone. They have invented various alternatives for their own scientific use. In the Visible Speech invented by Bell, the symbols represent the vocal organs, shown in the positions which they adopt when producing the relevant sounds. Another completely new departure is the Alphabetic of Jespersen: this combines Greek letters and Arabic numerals in each symbol. The letters stand for an organ of speech, and the numerals for the degree of closure or movement of that organ. As an example of Alphabetic, the sound of *m* is written α 0 (lips closed), δ 2 (back of palate lowered), ε 1 (vocal chords vibrated). Obviously it is not intended that such elaborate systems should ever be used in place of the ordinary alphabet. They are for the benefit of the student of phonetics.

A similar purpose lies behind the various special "phonetic" alphabets which are based upon the Roman form. The best known is the alphabet of the International Phonetic Association. This is regarded as sufficient for denoting the speech sounds that are usually met with, and has as many as nineteen vowel symbols. But in America it has been found inadequate

for the sounds of the Indian languages, and the alphabet specially devised for them has thirty-one vowel symbols. The study of such scripts belongs mainly to the science of phonetics, and need not be pursued here.

§ 4

It has just been stated that the Roman alphabet is not large enough to express with accuracy all the sounds even of English. This is particularly true of the vowel sounds. The Latin language had five basic vowel sounds, and the Latin alphabet had five vowel signs. Latin was, therefore, well catered for. We, on the other hand, have twelve vowel sounds in English speech, but our alphabet has only the same five vowel signs as the Latin had. Thus the present Roman alphabet is not by any means perfect as the written medium of English. If we were to scrap all the current spellings, and make a fresh start in writing English, using only the letters now available to us, the result would still be in some degree displeasing to the phonetician ; it would not be possible to adhere strictly to the principle of " One sound, one sign "—i.e., only one sound for every sign and vice versa. Nevertheless, it would make a paradise when compared with the purgatory of our present spelling. Why is it that our spelling is so appalling ; and what can be done about it ?

It is well to remember that any system of phonetic spelling in time becomes out of date, unless it is subject to continued reform. This fact arises from the very nature of the system. Its aim is to crystallise into written form the sounds of a spoken language at a given point in time : in the case of ancient Greek, for example, this function was first performed when the Greeks originally took up writing, in about the tenth century B.C. But the sounds of all languages are liable to change. Sometimes this change has been called phonetic

decay, but the term presents an incorrect idea. There is nothing unnatural or decadent about the change, which is a normal part of the life of languages. The Sanskrit word *trayas*, the Greek *treis*, the Latin *tres*, the German *drei* and the English *three* all have the same origin, a word presumed to have been **treyes*: the reason for the differences between the opening consonants (*t*- in Sanskrit, Greek and Latin, but *d*- in German, *th*- in English) is that sound change has taken place in German and English which has caused the differentiation that we now see. It will be plain that, when a sound change has taken place, the phonetic spelling which was previously correct becomes incorrect, and needs to be changed also in order to match the new sound. If the spelling is left as it was, it becomes less phonetically accurate, and the longer it is left, the greater the inaccuracy tends to become.

It is, of course, a natural thing for people to be unwilling to change their spelling, because of the trouble that it gives them to learn something new. Nor is that the only influence that makes them wish to keep to what they know. There is the quite legitimate desire to retain a spelling for etymological reasons, because it helps to clarify the meaning of a word when its ancestry is made apparent. This is especially true in English of the many words descended from Greek and Latin. Take, for example, *philosophy*, from Greek *philosophia* "love of wisdom"—for anyone who knows Greek, the derivation stands out inescapably. The ancient Greek *ph* stood for *p* plus aspirate: but later became a spirant like our *f*. But spell the word *filosofi* (which is like what the Italians do, with their *filosofia*), and the origin is not so obvious. There must be plenty of people who, though familiar with the derivation of *-sophy*, fail to see that Sofia, the capital of Bulgaria, gets its name from the same source. Or *cinema*, a recently-formed word, from Greek *kinō* "move," *kinema* "movement": we

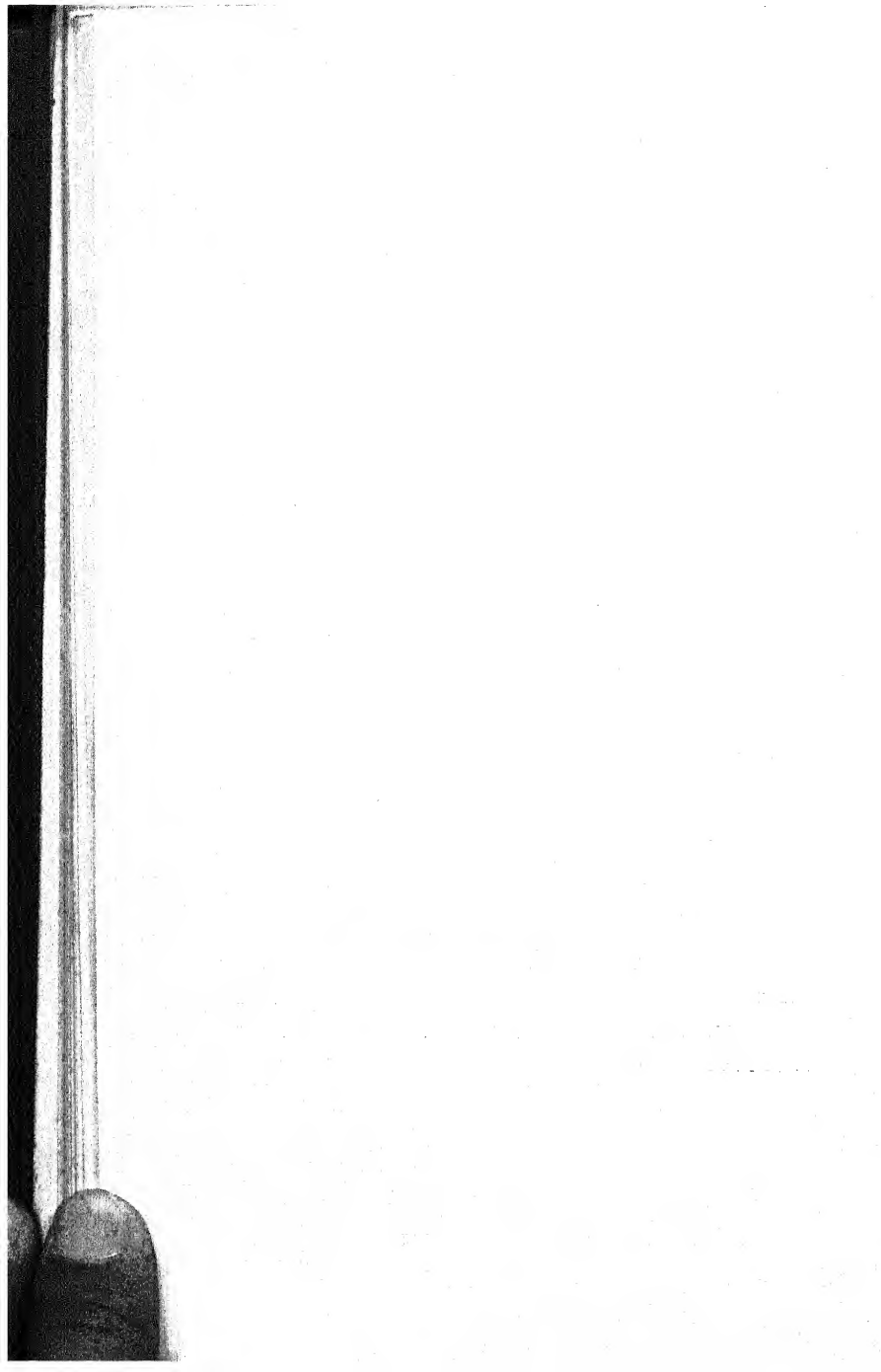
have in our speech turned the Greek stop consonant k- into a sibilant, but still have the spelling to remind us how the word got its meaning. The advantage would be lost if we wrote *sinima*. Or, to take a Latin example, *society*, from Latin *societas* "community of associates, allies" (*socii*): just as in *cinema*, we say a sibilant in place of the Latin stop consonant -c- (which was pronounced like -k-). A more phonetic spelling, such as *sosaieti*, would in no way help us to see that the basis of the word is not the same as that of *sosidi* (i.e., *sausage*).

Incidentally, the slight shock that an unfamiliar spelling gives us is a reminder of an interesting aspect of our attitude to writing. Once a particular way of writing a word has become perfectly familiar to us, we regard it as in some degree logographic. We no longer have to "spell" the word out phonetically, but see it as a single composite symbol (though it may consist of many letters), and automatically fit the right sense and sound to it. So we can take in the meaning of a whole page of written words with great rapidity, by recognising their appearance. And, when in doubt as to how a word should be spelt, we can sometimes settle the matter by writing down alternative versions, to see which "looks" best. This shows that in use even our basically phonetic writing tends to approach the fixity of such forms as the Chinese ideograms (or logograms, as they may be more fittingly called).

We have seen that some of our unphonetic English spellings are due to the preservation of the forms that show their etymology. But on occasions the scribes who fashioned the spelling made a mistake of etymology, and imported into words some letters which they had never possessed previously. *Science* (a word borrowed from Latin via French) was "correctly" spelt with a silent -c-, since the Latin original *scio* had a -c-. But two other words similarly taken from French,



Plate V.—BABYLONIAN ESTATE RECORD. A CLAY TABLET
(LATE THIRD MILLENNIUM B.C.), GIVING A LIST OF ELEVEN
ESTATES, WITH MEASUREMENTS OF AREA AND DETAILS OF
THE PRODUCE OF THE LAND.



scituate and *scent*, were given -c- out of error¹: the relative Latin forms were *situs* and *sentio*. The error was commented on by John Ray (*Note on the Errors of our Alphabet*, 1691) who calls these "false spellings" which had been recently introduced in his time. *Scent*, of course, is still with us. Again, that bugbear of children, *scissors*, should have no -c-; it was earlier spelt *sisours* and *cissers* (Fr. *ciseau*), but those more reasonable spellings were changed because of a mistaken connection with Latin *scindo* "cut," instead of the true derivation, from Latin *caedo* "cut." *Isle* is from French *île* (now written *île*) and ultimately Latin *insula*: earlier French had the spelling *isle*, and the -s- was "correctly" brought back in English. But then a further step was taken, and -s- was also put in the word *island* which has similar sense but different derivation (Old English *igland*). Thus as an etymological spelling *isle* is right and *island* wrong.

Finally, mention may be made of a less common cause of unphonetic spelling. In the manuscript writing of Norman times it was found that the spelling of -um-, -un- and -uu- (i.e., -uv-, since *v* was not then in use) led to confusion. This was avoided by changing -u- to -o-, giving -om-, etc. So *cumfort*, *munk*, and *cuer* became *comfort*, *monk*, and *couer* (*cover*). There is every reason to go back to the old spellings here, since there is no longer any reason to fear that they would cause ambiguity.

Such being the malady, what is the cure? It is: to reform our spelling by making it more phonetic. Simple enough to say, but not so simple to get it done! There are very few subjects which arouse more fury than this question of spelling reform, especially among people who are ignorant of the historical background. But we shall have to have reform, unless we are prepared to accept the eventual alternative—

¹ The earlier spelling of *scent* is to be seen in the 1623 edition of *Hamlet*, i.5.58, "I sent the mornings ayre."

which is, that in time all our written words will become logograms which have broken their phonetic connection with the spoken words. If that came about, it would be as hard to learn to spell in English as it is in Chinese. Undoubtedly we shall prefer to reform.

Although it is outside the scope of this work to recommend any particular method of reform, I might express my own view that the most natural way seems to be to proceed by stages, taking the more abnormal spellings first. Since as long ago as the days of cuneiform, the process of amending spelling gradually in order to keep pace with linguistic changes has been a regular feature of writing, except where there has been deliberate scholastic influence in the opposite direction. Perhaps our salvation is most likely to come from the U.S.A., where the hand of tradition does not lie so heavily.¹ In the meantime, spelling is the greatest obstacle to the adoption of English (whether in the "Basic" form or otherwise) as an international language.

CHAPTER V

THE HISTORICAL INFLUENCE OF WRITING

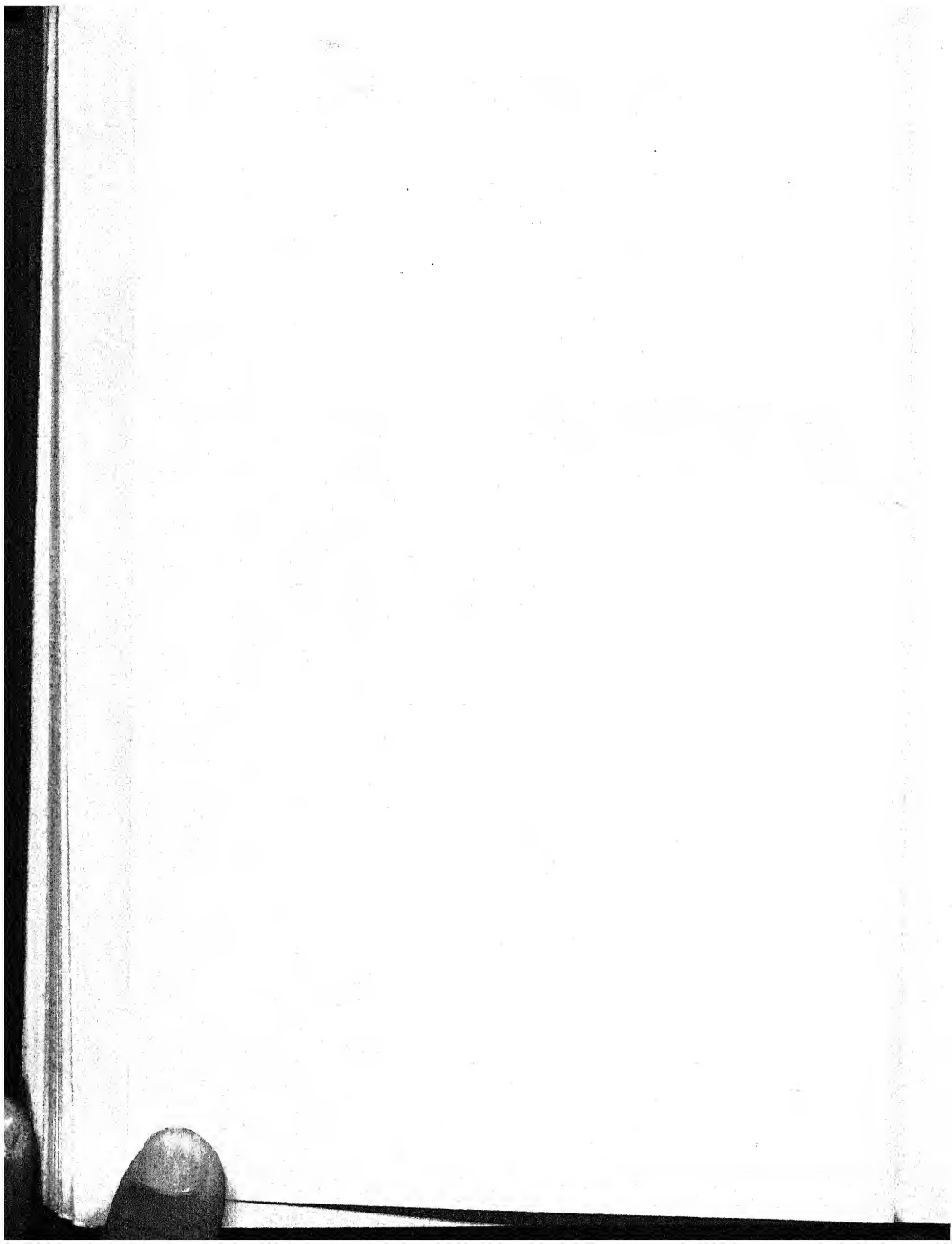
§ 1

In the ancient tradition of the Chinese, the Egyptians and the Babylonians, the invention of writing was made by divine

¹ Already American spelling has such simpler spellings as *plow* and *color*. President Theodore Roosevelt in 1906 ordered the reform of spelling in official publications, in respect of about three hundred words (e.g. *ibru*, *thoroly*, *dropt*), with the intention of adding more words subsequently. But opposition both in and out of Congress was so strong that he was forced to cancel the order. For a good study of the difficulties in the way of reform, see *Problems of Spelling Reform*, by Sir W. A. Craigie, 1944.



Plate VI.—BABYLONIAN MAP OF THE WORLD. THE WORLD IS SHOWN SURROUNDED BY THE OCEAN, WITH BABYLON ON THE RIVER EUPHRATES. THE TEXT ABOVE THE MAP RELATES THE DEEDS OF KING SARGON OF AKKAD, AND THE MAP SERVES TO ILLUSTRATE HIS CAMPAIGNS.



beings. It is natural that such a remarkable possession of man should have been regarded as something beyond his unaided powers of creation, and especially so at a time when the gradual development of writing from its early pictorial form was not understood. But there is another reason for putting a high value upon the art of writing, though it is one which could hardly have been properly appreciated by the makers of the fables. It is, that writing is pre-eminently the art of civilisation. Indeed, it has made our civilisation possible—not only by permitting the existence of a highly developed literature and science, but by playing a vital part in the reorganisation of society which produced the complex states of ancient and modern times. Both public and private life are profoundly changed by its acquisition. Without it we could not have risen far from a condition of barbarism.

§ 2

In considering the effects of the introduction of writing, it will be convenient to look first at the area of the Rivers Tigris and Euphrates where cuneiform arose. Our knowledge of conditions here is particularly rich, and they may be taken as a general indication of how the use of writing developed in the ancient world.

The fact that at once strikes our attention is the close association of writing with the temples. The earliest written tablets are found in Sumerian temple ruins, and temple finds always provide some of the richest stores for the archæologists. The explanation is that the religious communities were the most important in the contemporary society. They formed permanent colleges, whose members changed, but which remained corporately the same. Inevitably this led to an accumulation of power in their hands. The estates that formed the temple property (being nominally the possession

of the god), made them wealthy. The priests managed their estates, letting them out for rent ; or else they farmed them themselves, and for this purpose had to employ labour. There was industrial activity supervised from the temple, and often actually carried out on its premises. For example, for Lagash, a small Sumerian city, we have the records of the temple of Baü. It employed bakers (forty-eight, including twenty-seven slaves), brewers (thirty-one), spinners and weavers, a smith and other artisans. Another outlet for the wealth of the temple was to lend it at interest, which we know that the Babylonians did.

Activities of this sort required writing. It is thus only natural that the oldest specimens of Sumerian ideography relate to temple accounts. Unless they kept records, the priests would not know how much their revenue was, who had and who had not paid them the produce due on their estates, nor even whether some member of the priesthood was wrongly appropriating for his own use some of the temple's wealth.

Very large numbers of clay tablets have been discovered which were used in the temple counting-houses. There was in this connection one special difficulty to be overcome, which helps to account for the number of the remains. A clay tablet does not remain damp for long, and has to be written on before it dries. The temple clerks therefore wrote a separate temporary memorandum in the first place to record each item of receipt, and waited until a number of these had been collected. Then from this material a weekly ledger account was prepared, followed by monthly ones, and finally the whole year's account. The number of the temporary memoranda used in a year would run into thousands.

The temples had to provide schools in order to ensure the continuance of writing—and especially, at the start, to see that the same conventions were followed in the choice of suitable signs. In this way they prevented the anarchy that

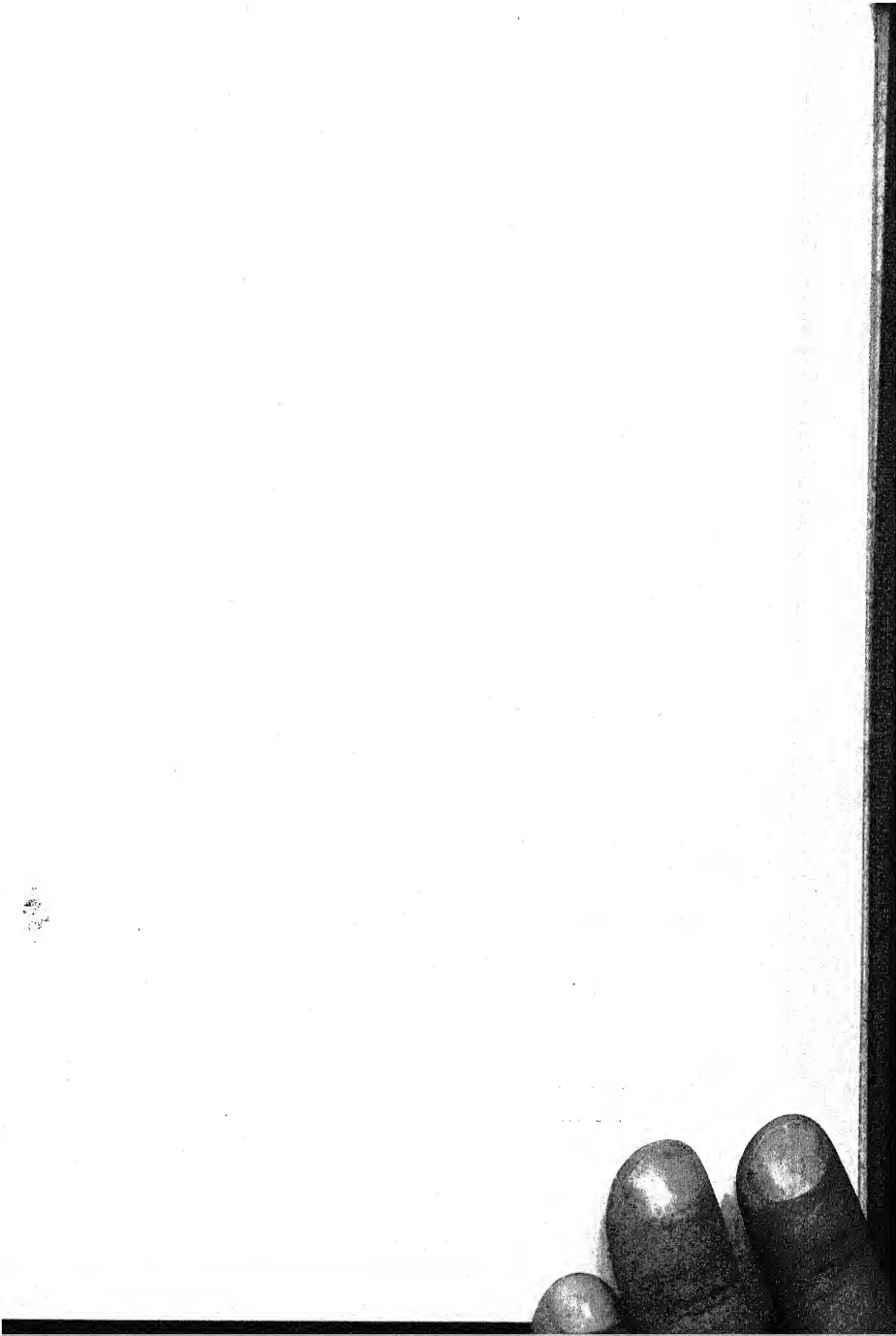




Plate VII.—HAMMURABI'S CODE OF LAW. THE UPPER PART OF THE STELE IS SEEN. IN THE SCENE THE KING IS RECEIVING HIS LAWS FROM THE SUN-GOD, SHAMASH.

would have arisen from the existence of numerous alternative ideograms. We possess specimens of tablets similar to our copy-books, which the pupils used in the schools. On one side of them are signs made by the teacher, and on the other the pupil's imitation of them. As the writing developed and became more perfect, it was used to record religious texts, hymns and descriptions of ceremonial, and the scientific knowledge of the day in the form of divination and astrology. A collection of literary and scientific works slowly formed itself in the temples, which became more and more the centre of learning. The standard works were used in the schools to provide material for copying. This has led to the curious result that we have far more copies of the earlier parts of such works than of the later, which are sometimes altogether wanting. For the pupils all began their copying with the early passages, and their interest was apt to flag before they had got through their task—if, indeed, they had ever meant to finish it.

Thus, writing served well for the purposes of a priest-directed society of a gradually increasing complexity. But it was not possible to confine the knowledge of it to the servants of the temple, greatly though it might have been to their interest to do so. Whether it was with willing co-operation or without it that the art of writing spread outside the temple walls, we do not know. What is plain is that the reins of temporal power began to pass out of priestly hands when their monopoly of writing disappeared.

In the empire of the Babylonians, and then, after them, of the Assyrians, writing was eventually used for practically all of the diverse purposes which it serves to-day.

Commercial use was still to the fore. Indeed, this type of use is quite characteristic of the Semitic civilisations of Mesopotamia, and may fairly be taken as a sign of one side of their special development. The relative frequency of occurrence

of tablets of this sort is well marked when we contrast the remains of writing of other ancient civilisations, e.g., the Chinese, the Egyptian, or the Greek. Of course, in some degree the contrast is misleading. We are fortunate in possessing in very great abundance the day-to-day memoranda of the people of Babylonia and Assyria, on account of the fact that they were written on indestructible clay. Those who wrote them often did not intend that their notes should survive for more than a few days : but in fact they have lasted for thousands of years. On the other hand the ephemeral writing of other countries has generally been made on equally ephemeral materials (e.g., paper, wax, etc.). Nevertheless, when full account has been taken of this feature, we are justified in stating that cuneiform not only took its origin in a form of commercial use, but continued throughout its history to have special association with it.

In addition to the business accounts and ledgers of private firms, we have contracts drawn up in cuneiform. It was laid down by law that all business deals should be so documented, and the record was completed by the addition of the signatures of the contracting parties and of witnesses. But though the employment of writing was thus very widespread, the number of persons who could themselves write (and read) was small. Accordingly, a way had to be found for documents to be attested which did not require writing. Sometimes a witness impressed on the clay the mark of his finger. More often he used a seal of the type known to us as a cylinder seal, from its shape. The seal bore as a design a scene from daily life, or from sacred legend, and its impression on the document took the place of its owner's personal signature. The same procedure was adopted in drawing up the records of personal affairs, such as betrothals and wills.

One of the most remarkable pieces of evidence of Assyrian commercial enterprise is a series of tablets from Asia Minor,

known as Cappadocian, and principally found by the ancient town of Caesarea. They date from about 2000 B.C., and represent the business correspondence of a colony of Assyrian merchants and commercial agents. These people were in regular touch both with agents in other parts of the country and with their home-land. It is notable that tablets of a literary nature are completely lacking.

To what other uses was cuneiform writing put by the civilisations of Mesopotamia? They can be briefly summed up under the headings literary, historical, administrative, legal and scientific.

The literature of Babylonia and Assyria was mainly religious, consisting of hymns and spells, and legends: there is, however, also evidence for epics with an historical basis. It was at a relatively late date that it was first committed to writing—the greater part of the early texts were written down shortly after 2000 B.C., probably in the reign of the great Babylonian king Hammurabi. Previously they were kept alive by oral tradition, in the same way as primitive literature in many other parts of the world: for example, the lengthy poems of Homer in Greece, the hymns of the Rig-Veda in India, and in more recent times the Border Ballads in Scotland. It is plain, therefore, that writing was not, either in Mesopotamia or elsewhere, necessary for the creation or continued existence of the prayers and songs with which the divine powers were to be moved, nor for the tales which glorified the famous deeds of the past. But there was a particular reason which probably led to the general commitment of literature to cuneiform writing in Babylonia, at the start of the second millennium B.C. At that time the Sumerians were finally giving up their political supremacy to the Semitic people of Babylon, and the non-Semitic Sumerian language was passing into oblivion so far as everyday use was concerned. But the ancient religious texts which had proved

their use, according to current belief, over so many centuries, were Sumerian texts, and it was unthinkable that they should be abandoned. Who knew how much of their power derived from the exact form of words that was hallowed by tradition? Yet how was the ancient form to be preserved, when the language itself was becoming less familiar? The solution that was adopted was, to preserve the texts by writing them down, and Sumerian was enabled to remain the language of religion.

In another way, too, writing was associated with the canonisation of tradition. In our own times, primitive peoples of the Pacific islands have looked upon alphabetic writing, when it was first introduced to them by missionaries, as something endowed with a magical quality of speech. The only form of communication hitherto known to them was that of speaking, and so quite naturally they thought that the paper, on which the Europeans wrote their signs, had a voice and was itself able to speak to those to whom it was brought. Hence they regarded writing with superstitious awe. If this is possible with the comparatively simple alphabet, it is likely that the elaborate and difficult writing in cuneiform made an even deeper impression as something mysterious and recondite on the non-literate part of the population of Mesopotamia (who were the great majority). The inevitable consequence would be to confirm the small group of the literate in the careful and exclusive maintenance of the ancient tradition, to which they owed their privileged position in society. So it came about that there was an excessive degree of respect for the wisdom of the past, and, even as late as the seventh century B.C., the Assyrian kings were adding to their libraries copies of texts which were then twelve hundred years old or more.¹

¹ Childe points out, in *Man Makes Himself*, that in Egypt books of a scientific nature (on mathematics, surgery and medicine), originally composed before 2,500 B.C., were still being slavishly copied after 2,000 B.C.

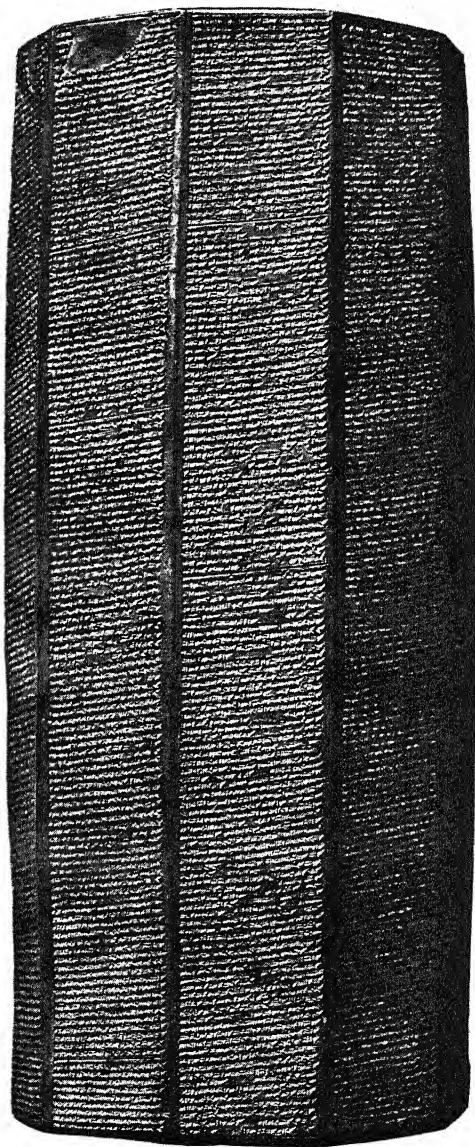


Plate VIII.—ANNALS OF ASHUR-BANI-PAL.

There was no writing of connected history among the Babylonians and Assyrians, but there were two kinds of native historical record. First, there are the tablets or cylinders on which kings give an account of their reign, or of some special incident such as the building of a temple. Doubtless the chief motive behind their manufacture was the kings' desire to perpetuate their own memory. Beside these monuments we have records kept by scribes for purposes of chronology. As early as Sumerian times, years were dated by important events which happened in them, and we have Babylonian tablets with lists of events. For example, a certain year is that "in which Hammurabi restored the temple of Eturkalamma for Anu, Ishtar and Nannai" (Eturkalamma being the name of the temple, and the last three, names of divinities). We may compare the American-Indian system seen in Figure 2. Lastly, lists were also kept of the names of kings, showing the length of their reigns, and these were amplified by the addition of short chronicles of the chief events in each year.

A further highly important source of historical information is the letters and despatches written by kings and by governors of cities. The richest finds have been made in neighbouring countries, at Tell-el-Amarna in Egypt and at Boghaz Keui in Asia Minor. Here can be seen the raw material of political history, the notes and the treaties exchanged between the men who were at work creating it. The medium of language and writing for these international communications was commonly Babylonian cuneiform, which had the status of a *lingua franca* outside its own country.

The legal use of writing can be seen in the tabulated Codes of Law, fragments of a number of which still survive. Though not the earliest, by far the most valuable of these monuments is the Babylonian Code of Hammurabi. We know this Code mainly from a stele (an upright stone slab) which

was originally set up in a temple in the city of Babylon, where it could be consulted by all who were able to read. Further copies were made on other tablets, which were erected in other parts of the domain. There will be no need to stress the importance of such published Codes in the establishment of a stable form of society. So long as knowledge of the laws of a community remains inaccessible to most of its members, they will feel themselves insecure, at the mercy of what will appear (whether rightly or not) as the arbitrary dictates of a select minority. When the laws were made a matter of public knowledge, this uncertainty was removed.

Lastly, writing (including numeration) was used for a variety of scientific purposes. All of these had a firmly practical origin. Thus the science of arithmetic and geometry was called into being, no doubt, in the first place to assist calculations such as the amount of grain required for sowing a certain area of land, or the length of timbers for building. The science was reduced to written form in order to satisfy the same priestly need for accounting records as had produced the writing of words.

Then the record of the results of astronomical observation led to the formation of the calendar, according to which the life of the community could be ordered, and in particular the processes of agriculture ; and also served the pseudo-science of astrology.

Finally, we may refer to the medical texts which record the history of cases of illness, and give prescriptions for treatment. These testify to an immature state of medical knowledge ; and from the available evidence it seems that the use of writing did not bring the progress that might have been expected in this field. It may be that medicine, in company with other sciences which (unlike the handicrafts) were at an early date recorded in writing and were made " literary,"

became, as a result, too remote from the world of practice and experiment, and too resistant to change.

§ 3

Cuneiform writing was, then, used for the purposes which have been briefly summarised. Possibly such an extensive list may have caused the reader to think that writing and reading were common arts, and regularly used in the everyday life of the majority of Babylonians and Assyrians. If so, the impression must be corrected. The fact is that only a very small proportion of the people ever mastered the arts. Knowledge of them was confined to priests; to scribes and clerks attached to the temples or working for commercial firms; to public scribes who gave their services to anyone who paid them; to members of learned professions (e.g., lawyers and doctors); and to government officials. Many members of the public must have possessed documents, such as private contracts or wills, which they were themselves unable to read. The case of the Assyrian king Ashur-bani-pal¹ illustrates the point. He was a specially enlightened ruler, and a patron of literature. He founded a royal library (possibly the first in Mesopotamia, as distinct from temple libraries) in his palace in Nineveh, sending scribes all over his domain to make copies of ancient works. Even Sumerian literature was included: in many of the Sumerian texts he had placed interlinear translations in Assyrian. The library in the temple at Nineveh of Nebo (god of learning) was also endowed by him. The king gives an account of his life on a ten-sided clay prism, and in the introduction to it occurs the following passage: "I, Ashur-bani-pal, within the palace understood the wisdom of Nebo, all the art of writing of every craftsman, of every kind, I made myself master of them

¹ King in 669-626 B.C. He appears in *Ezra*, iv. 10, as Asnapper.

all." This seems to mean that he could both read and write, and could manufacture clay tablets and engrave on stone. Obviously the accomplishment was a rare one. Indeed, we learn this directly from a text written on the tablets in the king's own library, in which he says (speaking of the art of writing): ". . . among the kings who have gone before, no one ever acquired that craft . . ."

Nevertheless, despite the strictly limited number of those who could themselves use cuneiform, it is plain that it must have helped to bring about very great changes in both the public and private lives of the people. From this aspect, the more cultural uses to which cuneiform writing was put, the literary and historical, may be overlooked as altogether subsidiary. There was nothing like a reading public to find here enjoyment and guidance. Literature remained in the form of an oral tradition for many centuries. It is important that we should not overlook this, since the more recent multiplication of books causes us to associate writing and literature especially closely. On the other hand, the commercial use made it possible to take full advantage of improvements in the techniques of agriculture, weaving, metal-working, pottery-making, etc. Man was passing from the age when each household produced the manifold goods needed by itself, and was introducing the age of specialisation. When the supply of goods became more abundant, writing provided the means to facilitate their disposal and exchange, thus making possible a more complex economic system. The priestly societies of the temples were the first to benefit, as we have seen. Later on, industries and trading organisations were set up, apart from the temples, and even international trade begun. In the sphere of government, writing enabled rulers to extend their personal influence very much more widely. Orders and reports could pass to and from the centre of administration with far greater certainty. Contact was made with foreign

states which would otherwise have been either impossible or at any rate more hazardous. Lastly, the codification of the laws made for a more stable form of society, in which the whim of the powerful individual was made subject to definite, publicly-stated restrictions. Even if a given law was unfair in its application to certain members of the community, it was a benefit to them to know what their position was.

§ 4

We shall not be able to follow here the part played in history by all the systems of writing. The remarks that follow will apply chiefly to our own system and its historical antecedents.

In ancient Egypt it does not seem that writing developed in the temples, as in Sumer, but rather among the professional class of administrators attached to the royal house. One of its earliest uses must have been to preserve the records of the height of the Nile flood, which provided a basis for the assessment of wealth, and consequent collection of taxes; and also of the survey of estates, so necessary where the inundation could sweep away natural boundary marks. The relatively highly-centralised government employed large numbers of official scribes, for whom writing was the key to a life of ease and security. Such indeed is the theme of a collection¹ of instructions given by a high Egyptian official to his son Pepi. It advises him, "Love letters as your mother," and says that through their knowledge "You may protect yourself from hard labour of any kind and be a magistrate of high repute." How widely writing was known it is difficult to say. While it may be taken that peasants and

¹ The work was used for teaching purposes in the schools. It is commonly known by the title "Hymn in Praise of Learning."

artisans were ignorant of it, it seems probable that a fair proportion of the upper classes (in whom the officials are to be counted) enjoyed the gift. This may be deduced not so much from the religious Guides to the Other World, which told what departed souls would have to do—for these may have been used in a magical fashion, so that it would be enough to possess a copy and not to have read it; but there was also a quantity of profane literature, including science, fiction and books of travel. Clearly there was a public with both leisure and ability to read for profit and also for enjoyment.

In Palestine two fields in which writing was used had special significance. The ancient scriptures of the Hebrews, from which grew the Old Testament, were put down and preserved in writing at various dates, beginning as early as the ninth century B.C. Further, the Phoenicians made use of writing as an indispensable adjunct in their widespread trading activities throughout the Mediterranean area. It was in the course of these activities that knowledge of writing came to Greece, with such important results for the world in the fixing of their literature in permanent form. The roots of European civilisation largely grow out of these two sources, Palestine and Greece. This brings sharply to our notice a function of writing which is of the first importance, the preservation of tradition. In societies ¹ which have never known the use of writing, the maintenance of such tradition as there is (in respect of tribal customs, religious lore, medicine, witchcraft and so on) must be left mainly to the composite memory of the tribe, and in particular of certain individuals specially chosen for the purpose. Their memory can be assisted by aids of various sorts: some of these have previously been mentioned in this book, the knots tied in

¹ These are called preliterate rather than illiterate, to show that they are in a stage of development preceding the introduction of writing.

ropes, notches cut in sticks, and wampum and other forms of picture-writing. But in spite of these, dependence is mainly placed on the powers of memory ; and memory is a precarious thing. As we have seen, American Indians and the people of Easter Island lost the recollection of their past when there had once been a break in the continuance of their oral tradition. The survival of the Greek tradition forms the sharpest contrast. There have been long periods of time between us and the ancient Greeks during which the achievements of their civilisation have been overlooked and forgotten. But they were not lost. They were preserved in writing, and could be apprehended anew at the time of the Renaissance, little the worse for the intermission.

The ancient Roman state made the widest use of writing for every kind of purpose, and there is plenty of evidence that a high proportion of its subjects in Italy could read and write. Then came the collapse of Rome, and the Dark Ages. Writing, together with learning in general, retired into the protection of the Church. This was a remarkable repetition of history. The Christian Church was now the home of European writing, just as the temples of Sumer and Babylonia had been the original home of cuneiform. The Christian churches and monasteries used writing both for their own religious and secular needs, and to maintain the tradition of the pre-Christian past. Further, they were alive to the need increasing the knowledge of the Gospel by giving the power of reading to the many still preliterate peoples of Europe. So we find that the Church was responsible for the introduction of alphabetic types of writing, as its missionaries spread through Europe.

The repetition of history did not stop there. The knowledge of writing, as disseminated by the Church in the Dark Ages, was not made available to the mass of the population. It was sufficient for them to receive oral instructions from

the priests, and it does not seem that for many centuries there was any large public need of the writing art. But the rise of commerce again changed the situation. With the break-up of Western civilisation, trade had degenerated into small-scale transactions between simple producers. Gradually conditions became more favourable for trading between one city and another, and then between different countries; and, just as in Babylonia and Assyria, the merchants found it necessary for their business to be able to use writing. The movement began in Italy, where we find writing in commercial use as early as the eleventh century A.D. It next extended to Germany, Denmark and the Low Countries, in all of which, in the fourteenth century and later, it caused the rise of schools independent of Church control. The prime purpose of it all was to produce scribes capable of completing the merchants' account books; but the effect was much wider.

It was, however, only after the invention of printing, and the consequent cheap multiplication of books, that for the first time in history it became possible to bring the knowledge of reading and writing to the general mass of the people. It will be unnecessary to point out here the very wide extent to which writing has since come to be used in the modern Western states. Presumably everyone who reads this will be in a position to judge the matter for himself, and also to assess the importance that writing plays in his own life, directly or indirectly.¹ But attention should be directed to some channels through which the new knowledge of writing has flowed particularly strongly in the last four centuries.

First, in the sphere of religion. The Reformation placed knowledge of the Bible at the centre of its tenets. It was a

¹ The "indirect" assessment is not easy. But we can at least say that it must be a large one, except in the possibly hypothetical case of a self-sufficient hermit, who manages to escape the all-devouring notice of the Inland Revenue, the Ministry of Labour and the various other State Departments which would be interested in his existence.

necessary corollary that men should be taught to read, in order that they might then be able to study the Bible themselves. Hence the Protestant Churches have always been pioneers in the encouragement of literacy, and through their agency knowledge of religious literature has become widespread. More copies of the Bible, in some four hundred translations, have been distributed throughout the world than of any other book, and missions have brought the power of reading and writing to many backward places. The effect of this is not, of course, confined to religion. Missionaries soon found that it was a mistake to bring to native preliterate peoples a Bible which was written in a language strange to them, as English would be. Far better results were got by using the mother tongue of the people concerned. They have therefore devised new alphabets and made translations into the native tongues. In this way many primitive peoples have been given the elements with which they can build up a literary stock of their own, quite apart from the other uses to which they may put their new gift.

Secondly, there have been powerful economic factors which have stimulated the demand for a more general knowledge of writing. It has already been noticed that, starting with the eleventh century A.D., the increase in the scale and scope of commerce called for the instruction of clerks able to keep accounts for the benefit of the merchants. At that time, and for centuries afterwards, industry relied on the technique of handicraft, knowledge of which passed directly between master and apprentice, working in intimate association. This was altered by the advent of the machine age. Since then there has been a complete revolution in working methods, which has introduced on the one hand more complex techniques, and on the other hand immensely larger, and more elaborate, units of production. Changes of this nature have depended on the spread of literacy. As may be seen from

the data given in the next chapter, the countries with the highest degree of literacy are also those which have the fullest industrial development.

Lastly, the demand for literacy has also been political, as a part of the uprising of democratic ideas. It grew inevitably among men who opposed the view that the government of a country was the traditional privilege of a small minority of its people. For without literacy the mass of the people, however numerous, must remain politically ineffective in the hands of a literate minority.

Such are the most important of the influences which have recently affected the spread of the knowledge of writing. It is important not to regard them as mutually distinct. Quite clearly they can co-exist, and react upon one another; and that they have done so is notable in the history of our own country of Great Britain.

CHAPTER VI

WRITING AND THE INCREASE OF LITERACY

§ 1

It is fitting that this history should conclude with a brief examination of the present extent of the knowledge of the first two of the three R's, reading and writing, throughout the world. It is safe to say that more people now possess that knowledge than at any time before,¹ although we can produce no definite figures for antiquity, nor even for more recent times until the early nineteenth century. But despite

¹ It has been estimated (but the estimate is not much more than a reasonable guess) that between 60 and 65 per cent. of the population of the world is still illiterate.

for most of the important countries of the world.¹ Figures of this kind are valuable as a general indication of the extent of illiteracy, but must be treated with caution. In the first place, each is the product of its own country, and no doubt they vary in the degree of their reliability. Then, comparisons may be misleading, because the figures relate to quite different criteria of what constitutes illiteracy. Thus England regards as illiterate a person who is unable even to sign his name in the register when married. But the majority of countries take as the criterion the ability to read or write (some narrowing this down to reading only, others to writing only): but this at once raises the awkward question of "reading or writing *what?*" A man might learn to write his own name (thus qualifying as a literate in England) but be unable to do anything more. India has made the attempt at a more explicit definition, since she requires the power to write a short letter to a friend and read the reply. It must unfortunately be admitted that no entirely satisfactory test of literacy has yet been found. Finally, the figures are apt to be misleading because they relate to different sections of the community. South Africa and Mexico take all people of all ages, and others take those all over a given age: but some are based on sections of the public which may not be entirely representative, e.g., army conscripts (Japan), those getting married (England). It is strongly to be desired that there should be more uniformity between the countries of the world in choosing a basis for illiteracy figures.

§ 2

We have seen in the preceding chapter that the most striking feature of the present-day spread of literacy is that

¹ A notable absentee is Germany, which has given up keeping figures. In 1913 the percentage of illiteracy among army conscripts was as low as 0.05 per cent.

it is a part of the economic and political movements that are shaping our world. Important developments in this field are still being made, and some of them are mentioned in the following country-by-country review.

In Europe there is a wide difference between the countries in the North and West, and those in the South and East. Great Britain, the Netherlands, Denmark, Sweden, Switzerland and Germany have, for practical purposes, wiped out illiteracy. In England and Wales, for example, the figures have fallen as follows: 1841-5, men 32.6%, women 48.9%; 1914, men 0.8%, women 1.0%; 1934, men 0.15%, women 0.14%. But Poland, Rumania, Bulgaria, Italy and Spain have much leeway to make up (in which Italy made good progress between 1921 and 1935). It has been noticed in the U.S.A. that the relatively high rate of illiteracy among immigrants used to be mainly caused by those people who came from Southern and Eastern Europe. It is in those districts of Europe that industrial development is backward, and that the Protestant Reformation has had least effect. So far as the technique of writing goes, there is no serious difficulty to be overcome in Europe. In one form or another the alphabet is in universal use and is a satisfactory medium.

Russia, or rather the U.S.S.R., is partly European and partly Asiatic, but it is proper to treat it as a whole. The attack on illiteracy under the Soviet government has produced quite astonishing results. In 1897 the rate was 78 per cent. It was the policy of the Czarist regime generally to give official support only to the teaching of the Russian language, so that the people speaking other languages (estimated at 146 in 1926) were seriously handicapped. This was changed by the Revolution. Lenin coined the slogan: "An illiterate people cannot build the Communist state," and the State charged itself with the abolition of illiteracy. In 1936 Stalin decreed the removal of illiteracy among all persons under

fifty years old. The immense task of teaching such large masses had to be undertaken in novel ways, if much progress was to be made in a reasonably short time. So instruction was given by children at home to their parents, in factories and in the Army. Many peoples, especially in the remoter parts of the vast country, were still in a preliterate state, and suitable alphabets had to be devised for them by phonetic experts before their own forms of speech could be written down. Seventy-four such groups were provided with writing up to 1934. There has been particular encouragement for the Roman alphabet,¹ which has in some cases replaced the more difficult Arabic alphabet. The fall of illiteracy can best be judged from the figures: 1897, 78%; 1926, 43.3%; 1937, 13%; 1942, 10%. It is well to remember that these figures relate to the whole of the Union. Never has literacy been spread to so many people at such a rate elsewhere.

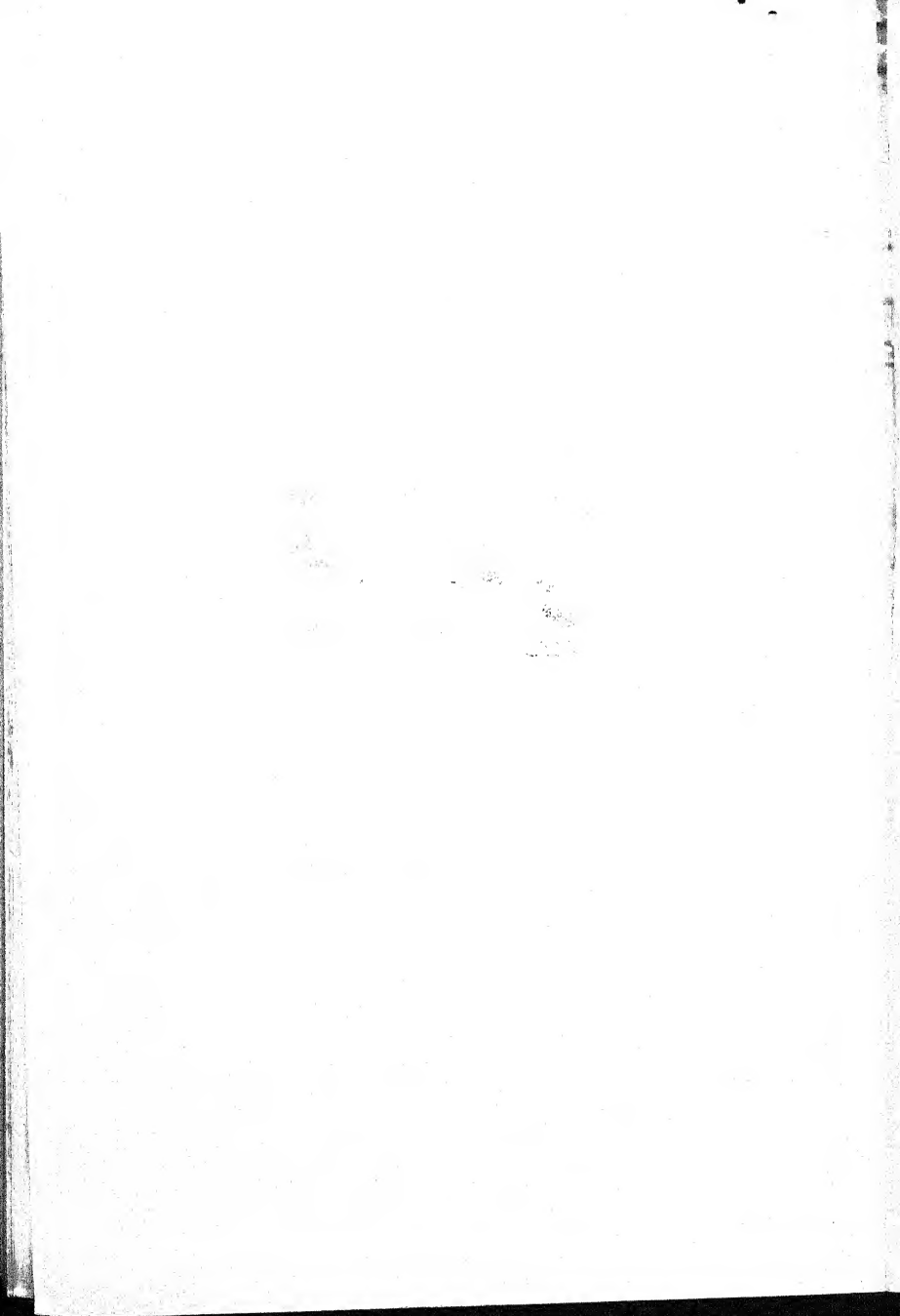
Turkey was until recently held back by her use of the Arabic alphabet, which she kept because of her religious attachment to Islam. Arabic, never an easy script, was more than usually unsuitable for Turkish, because the language possesses a large number of vowel sounds, while the script, like all the Semitic alphabets, is extremely poor at showing vowels. But the hold of tradition is always strong in the matter of writing, and there was bitter opposition, especially from religious circles, when it was proposed to adopt the Roman alphabet. Despite this, the Government ordered in 1928 that Roman only was to be used henceforward, and the change was made. Illiteracy in 1927 was 91.8% (all ten years old and above); in 1934 it was 55.1%.

In the Far East, India has been and still is a difficult

¹ But surprisingly Roman has in its turn been replaced more recently by the Russian (Cyrillic) alphabet, despite the latter's greater complexity (see *Soviet Light on the Colonies*, by Leonard Barnes, 1944, Penguin).



Plate IX.—TURKS LEARNING ROMAN ALPHABET. A TURKISH STAMP, SHOWING KEMAL ATATURK GIVING INSTRUCTION TO HIS COUNTRYMEN.



problem. Here, as in other backward and undeveloped countries, it is realised that a greater spread of literacy is necessary in order to remove the barrier to social progress caused by the existence of severe mental limitations among the bulk of the population. The work of the American Laubach (who has also been active in the Philippines, and elsewhere in Asia and Africa) is of special interest to those concerned with methods of teaching literacy. But the apathy of the native population is still proving a bar to progress.¹ The various Indian alphabets are also complicated to use, because of their essentially syllabic base.

China, too, is one of the backward areas. Figures are not available for the whole of the population; a recent estimate puts the rate for illiteracy in the army at 65 per cent. It is certain that this is in part due to the inherent difficulties of the Chinese script, which have already been explained. As long as three hundred years ago the Jesuits compiled a Chinese Bible, using Roman letters: and there have been invented in the present generation several different systems of transcription into Roman. But these have all come against the stumbling-block that they reduce the intelligibility of the language. A current innovation is to introduce phonetic signs into texts alongside the traditional characters. It is hoped that by this means knowledge of the standard form of the Chinese language will become more widely spread. Special mention must be made of the campaign begun in China in 1923 by James Yen, under the name of the Mass Education Association. Its story is one that makes fascinating reading,² beginning with the teaching of a camp of coolies

¹ It is worth noting that literacy in India is more common in certain castes containing merchants among their members than in other and higher castes in which merchants are lacking.

² An American account of it is shortly (1944) being published with the title *Freedom from Ignorance*, by Y. C. James Yen and J. P. McEvoy.

who were working in France in 1918. The essence of Yen's system is that he chose a limited number of Chinese characters, about twelve hundred out of a total of over thirty thousand, in order to form what might be called a Basic Chinese. Illiterate adults can read in this system after only four months' work. It is founded on colloquial language, not the standard, classical speech. In China the work of teaching this simplified Chinese, and with it the raising of the general standard of life, has been carried on especially in small village communities. One very practical result may be mentioned: in the Tingsien district (where the work was first developed on a large scale) the production of cotton was increased by fourteen times in the five years from 1932 to 1937. This is due to improved agricultural knowledge, and also to the greater aptitude for handling large stocks which follows the introduction of a proper accounting system. It reminds us of what happened when the priests of Sumer took up accountancy.

Japan is an example of what can be accomplished in abolishing illiteracy even with a difficult form of writing. The Japanese script is a hotch-potch of the classical Chinese system and of syllabaries based upon it,¹ and so is partly logographic, partly phonetic. Its complication is such that in popular publications (e.g., newspapers) it is common to write one and the same word in two ways: first in Chinese characters, and then in a Japanese syllabary to show the sound of the word. This helps to distinguish between native Japanese words and the many Chinese derivatives in the language. However, despite its difficulties, illiteracy is almost non-existent among army conscripts. Methods of Romanising the script have been put forward, and may take hold,

¹ It is described in G. B. Sansom's *An Historical Grammar of Japanese* (1928), who says of it "as a practical instrument it is surely without inferiors."

since there are not such strong objections to be overcome as in China.

In Africa a very great amount of work has to be done in bringing literacy to the native populations. So far as British-ruled areas are concerned, the problem is receiving attention from the Colonial Office. A recent Report¹ analyses the situation and makes suggestions for improving it. Unfortunately statistics are lacking, but it is evident that illiteracy or, rather, preliteracy is most extensive. In societies of this type it has been found that there is a danger that individuals, after receiving instruction in reading and writing, may relapse and lose their knowledge, because there is insufficient opportunity for them to use it. As has appeared in China and Russia, the knowledge has to be related to the lives of the people generally, if literacy is to be made permanent and useful. It is a tool which must be kept in proper use, to prevent it becoming blunt. The scripts employed to teach the African peoples have been forms of the Roman alphabet, but not all are equally satisfactory. In the first place missionaries wrote down the native languages in scripts which varied according to the European country from which they had themselves come: thus, an English missionary would adopt an orthography based on the English, and a Frenchman one based on the French. This has certain advantages, when it means that both the native language of a particular territory and the European language used by its administrators are written in the same fashion, according to the same phonetic principles. The reader passing from one to the other will feel no break. But it also means that there is great divergence between the written forms of different native languages: and this is embarrassing when a single linguistic territory is divided for political purposes (as the

¹ *Mass Education in African Society* (1943), published by the Stationery Office: Colonial No. 186.

Hausa territory, between French and British). Furthermore, the Roman alphabet has to be modified by awkward diacritical marks to make it suitable for African languages. For these reasons a new and simpler alphabet has been devised, based on the principles of that of the International Phonetic Association, and called "Africa," and it is gradually winning official support.

In the American continent, illiteracy is generally low in the north, high in the south. The U.S.A. compile the best and fullest statistics of any country in the world, with analysis of the degrees of illiteracy among the different strata of the heterogeneous population. Illiteracy is defined as inability to write in any language at the age of ten and over. The 1920 census gave an overall figure of 6 per cent., which was reduced to 4.3 per cent. in 1930. In the latter census the following are the main constituents: Native-born whites, 1.5 per cent. (sub-divided into those of native parentage 1.8 per cent, and of foreign or mixed parentage 0.6 per cent.); foreign-born whites 9.9 per cent.; and negroes 16.3 per cent. The make-up of the figure for foreign-born whites is of interest, since it gives a sidelight on conditions elsewhere, especially in Europe. The details are: Immigrants from the Azores 36.9 (per cent., as in the other cases); Portuguese 34.7; Italians 25.3; Poles 19.0; Yugoslavs 15.6; Turks 14.1; Spanish 14.0; Greeks 13.6; Russians 11.3; Austrians 10.4; French-Canadians 9.9; Hungarians 9.8; Cubans 6.6; Belgians 6.4; Finns 6.3; French 3.8; Germans 3.2; English and Canadians 0.6; Scots 0.3.¹ It is also specially interesting to note the difference between the figures of 9.9 per cent. for immigrants, and of 0.6 per cent. for the children of immigrants. It is plain that the newcomers to the country have been quick to

¹ But some of these figures seem to require special explanation: thus, on the face of it, the Turkish percentage is very low, while the German is higher than would have been expected.

appreciate the value of the new educational opportunities that are presented to them, and have in many cases seen to it that their descendants enter on life better equipped than they were themselves.¹ As a result, illiteracy is less common among such children even than among the whites whose parents were both native-born. There could hardly be better evidence of the ambition that inspires the new arrivals in the great Western democracy.

¹ The 1920 census brings out the same fact: foreign-born whites 13.7%, those of mixed or foreign parentage 0.9%.

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